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ABSTRACT

The eight-year longitudinal study was conducted by the Board of Cooperative Educational Services (BOCES) district, Buffalo, New York to determine the costs, benefits, and effectiveness of vocational education in that region. The study consisted of three phases plus a comparison with academic programs in the district. The phases included: (1) program cost analysis based on program costs and expenditures, (2) collection of effectiveness and control data through a survey of graduates from BOCES and regular high school programs, and (3) cost/benefit and cost/effectiveness analyses based on the ratio of benefits in dollars to costs in dollars. The findings include supporting tables and figures. Major conclusions are: (1) for cost analysis, comparisons between the costs per pupil and enrollment of occupation courses showed that a wide range of program costs existed within the BOCES schools; (2) for cost benefit analysis, considerable differences existed in the employment patterns of terminal students who selected BOCES occupational programs and those who did not; and (3) for cost effectiveness, higher program costs were not rewarded with economic gains and a set of strategies to increase cost effectiveness is presented. A bibliography is included and the School Record Form and Alumni Survey Form are appended. (Author/EC)

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A STUDY OF THE COSTS, BENEFITS
AND EFFECTIVENESS OF OCCUPATIONAL
EDUCATION

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March 1976

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A Study of the Costs, Benefits and Effectiveness of
Occupational Education

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The paper describes the methodology, findings and conclusions of an eight year longitudinal study of the costs, benefits and effectiveness of occupational education in a regional school district in the Buffalo, New York metropolitan area. Methodologies included cost, cost/benefit and cost/effectiveness analysis. Of thirteen programs, one had a favorable benefit/cost ratio. Occupational programs offered important non-academic advantages. They served students of average intelligence but poor academic achievement who would have a high probability of dropping out of school without a non-academic option. Occupational graduates expressed a much higher degree of satisfaction with their high school programs than did non-college bound, non-occupational graduates.

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A Study of the Costs, Benefits and
Effectiveness of Occupational Education

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This paper describes the methodology used and the findings and conclusions of an eight year longitudinal study of the costs, benefits and effectiveness of occupational education. The study was conducted during the 1974-75 school year. The objectives of the study were:

1. to determine the costs per pupil for vocational programs offered by a regional school district in the Buffalo, New York metropolitan area and to compare them with the costs of other programs offered by high schools of component districts and of vocational programs offered by other regional districts of the same metropolitan area;
2. to study the success of graduates of vocational programs in terms of employment, earnings and selected non-economic considerations, and to compare their performance with the performance of non-college bound graduates of high schools of component districts and with objectives established by the regional district;
3. to calculate benefit/cost ratios for vocational programs; and,
4. to develop decision matrices for evaluating the likely cost and effectiveness of alternative approaches for meeting district objectives for occupational education.

Setting. The study was conducted for the Board of Cooperative Educational Services (BOCES) district serving nine component school districts south of the City of Buffalo, New York. The component districts vary in nature from suburban to rural. Together they enroll approximately 30,000 students.

In 1968 this BOCES began to offer programs in vocational education. The offerings and enrollments grew rapidly through 1974 at which time both stabilized. Students take their academic subjects in their home district during either the morning or afternoon of each day. For their vocational subjects, they travel to one of two occupational centers (East and West) located in the northern portions of the BOCES district. A third center had been planned for the southern section but enrollments were not sufficient to justify it. As a result students in that section must travel considerable distances in order to participate in the occupational offerings.

Being somewhat cognizant of the relatively high costs of vocational education (even though the costs are heavily subsidized from state and federal sources), the Board wanted evidence as to what, if anything, was being accomplished that was beneficial to the region.

Evaluative Criteria. The BOCES Board, in consultation with its professional staff, had previously established objectives for its vocational programs. These included:

Upon completion of an occupational education program, 65 per cent of the students will indicate that they would tend to take the same program again if they had to make the choice over.

Seventy-five per cent of the graduates of any licensed occupation program will pass the appropriate examination.

Within six months after graduation, 60 per cent of the graduates, available for and having sought employment, will be employed full time.

Within six months after graduation 35 per cent of the graduates, available for and having sought employment in their specialization, will be employed full time in their area of specialization.

Within six months after graduation another 15 per cent of the graduates, available for and having sought employment in their specialization, will be employed full time in a position they consider related to their area of specialization.

In addition, two other objectives were specified to be used in connection with this study:

The high school dropout rate should show a decline over the years.

A high school education should prepare graduates for broad participation in civic activities, variety in conversation topics, and variety in leisure activities.

Study Design and Methodology

The study consisted of three phases: a program cost analysis; collection of effectiveness and control data; and cost/benefit-cost/effectiveness analyses.

Program Cost Analysis. Costs per pupil for the 1972-73 school year were computed for the sixteen occupational programs offered by BOCES. Since normative figures at the regional, state or national levels were not available, parallel computations were made for programs offered by the two other BOCES serving the Buffalo metropolitan area.

The most likely alternatives for students enrolled in occupational programs are academic and occupational courses offered by the nine component school districts.

Costs of those programs were developed for four of the component districts selected to reflect variations over the range in size of high schools and for both suburban and rural environments. With the average high school cost serving as a basis, the marginal cost of occupational programs were established.

Program costs and program expenditures are not necessarily the same thing. Expenditures refer to the dollar value of resources purchased during a given time period (usually a school year, July through June). Costs refer to the amount of resources consumed during a time period. In the case of labor costs, utilities and supplies, expenditures serve as an excellent estimate of costs. For purchases of items which have a life expectancy greater than one year, expenditures are likely to be considerably different from costs. For example, a building may be purchased during a five to ten year period but its usable life is for a thirty to fifty year period. During the five to ten year pay-off period, resources purchased (expenditures) exceed resources consumed (costs). The reverse is true during the balance of the building's life. Purchase of equipment and fixtures presents a similar situation although the usable life is likely to be shorter.

In estimating the costs for space (buildings), the persons in charge of the business offices of the three BOCES were polled as to the rental charges for space suitable for educational purposes. All three actually rent space from school districts and from private vendors. They were in agreement that \$2.00 per square foot was an appropriate estimate for average annual cost. This figure is for space alone (including taxes) and excludes costs for cleaning, utilities, etc. In computing program costs for space, the area in square feet assigned to a program was multiplied by \$2.00.

Costs for equipment and fixtures were estimated by computing the pro-rated annual cost using replacement value as indicated by the district inventory as the basis. The cost of money was set at 5.6%, the average rate paid by school districts in the State of New York during the period February through May 1974. The expected useful life for equipment was set at seven years and for fixtures at ten years. These are the time periods used by the Industrial Appraisal Co. of Pittsburgh, Pennsylvania in establishing replacement values. This company makes the inventories for two of the BOCES involved and for several area school districts.

Another adjustment was made in expenditures in order to portray a more accurate comparison of costs for programs within a district. The resource purchased by a school board to preside over a classroom is a teacher. Although there is little consistent evidence that teachers with more experience and training are more effective; and, although teaching responsibilities are not normally assigned on the basis of experience and training, teacher salaries are determined on such a basis. As a result, a program which happens to be staffed by more experienced teachers with much training could appear to be more expensive than a program which happened to be staffed with teachers having little experience and training. To preclude such a bias, an average salary figure was used for each district. For occupational programs, the average salary for occupational teachers in the BOCES was multiplied by the number of full-time equivalent teachers assigned to specific programs. Fringe benefits were computed by multiplying the above products by the percent which fringe benefits represent of professional salaries in the district. A similar procedure was used for computing salary and fringe benefits for high school programs. The only difference was that the

average salary used was for district teachers in grades 9-12.

Actual expenditures were used to estimate costs for operation and maintenance. These expenditures were pro-rated to programs according to the ratio of area assigned to a program to total area in a school or center. Operation and maintenance expenditures include custodial salaries and fringe benefits, utilities, insurance, certain contracted services, supplies and other expenses. Actual expenditures for supplies, textbooks, certain contracted services, and other costs could be identified directly with each program.

Costs of a general support nature are not identified with any particular program but provide essential services to all. Such costs include expenditures for administrative, clerical, and supportive teachers salaries and fringe benefits, and office supplies. Space allotted for general services was obtained by subtracting the square footage assigned to programs from the total square footage of the school or center excluding space used for district offices or rented out to another unit. The difference was multiplied by \$2.00 as in estimating program costs for space. Operation and maintenance expenditures were pro-rated to general services by the ratio of area used for general purposes to total area.

Equipment expenditures for general services were annualized as for equipment assigned to programs. For BOCES, costs for transporting students from the home school to the occupational centers were included in general services costs. For high schools, the costs of transporting students from home to school were included. Also, for high schools, salaries and fringe benefits of supportive personnel were included as general costs. These include teachers not assigned to one of the programs analyzed (primarily physical education, health, and music),

substitutes, aides, librarians, guidance counselors, psychologists and attendance and health personnel. To reduce total General Service Costs to a per pupil basis, the respective sums of the above costs were divided by the number of pupils enrolled in occupational programs of a given BOCES or by the number of pupils enrolled in the respective high schools (including pupils attending BOCES programs).

The collection of data was personally supervised by the project staff. This assured that similar assumptions guided the assembling of data from district to district.

The Effectiveness Surveys. Economic and non-economic information on graduates of both BOCES and regular high school programs were gathered from school records and through a mail/telephone survey. Two instruments were used: the School Record Form (Appendix A), and the Alumni Survey Form (Appendix B). The School Record Form was used to obtain information for each person on grade average, rank in class, I.Q., standardized achievement test scores, father's and mother's occupation, father's and mother's level of education, health problems, and major course sequence. These data were taken from the files of component districts. The Alumni Survey Form obtained information related to kinds of employment; extent of unemployment; wages; civic, leisure and conversational interests; and ratings of the quality and usefulness of their high school preparation. These data were collected via a mail/telephone survey of an alumni sample.

All participants of BOCES occupational programs who were members of the Classes of 1969, 1971 and 1973 were surveyed. These totaled 628 persons. Approximately 100 non-BOCES, non-college bound students were selected at random

from the October class lists of each of the Classes of 1967, (prior to the establishment of the BOCES program), 1969, 1971 and 1973. These totaled 422. The criterion of "non-college bound" was based upon data showing whether or not credentials for high school work were sent to colleges (or to other post-secondary institutions) during or soon after the high school senior year. Those for whom no such credentials were forwarded were defined as non-college bound. As reported later, the survey revealed that approximately 20 per cent of such persons did subsequently attend post-secondary institutions; but, these decisions were made long after leaving high school.

The School Record Form was completed for all members of the sample.

The sample size, distribution, and number of respondents to the Alumni Survey Form are reported in Table 1. The Alumni Survey Form was completed by 386 BOCES alumni (61.5 per cent) and by 233 non-BOCES, non-college bound alumni (55.2 per cent). For simplicity of reporting, persons in the sample are frequently referred to as "graduates", although included are 30 persons (out of 1050) who did not graduate. The number of dropouts was too small to analyze separately. The terms "alumni" and "students" are used interchangeably with "graduates". The term "non-BOCES, non-college bound" is shortened to "non-BOCES."

School Record Forms were completed by personnel of the component districts from district files under the general supervision of the survey staff. The Alumni Survey was conducted by the Survey Research Center of the State University of New York at Buffalo. The questionnaire was mailed to the sample in February 1975. Questionnaires to BOCES alumni carried a cover letter from the principal of the occupational center they attended. Questionnaires to non-BOCES, non-college bound alumni carried a cover letter from the principal of the high school

Table 1. Composition of the survey sample and respondents to the Alumni Survey Form.

Class Year	Graduates								
	BOCES Occupational			Non-BOCES Non-College Bound			Total		
	Sample	Respondents to Alumni Survey		Sample	Respondents to Alumni Survey		Sample	Respondents to Alumni Survey	
	#	#	%	#	#	%	#	#	%
1973	310	192	61.9	105	62	59.0	415	254	61.2
1971	208	125	60.1	104	61	58.7	312	186	59.6
1969	110	69	62.7	102	49	48.0	212	118	55.7
1967	<u>None</u>	<u>None</u>	<u>--</u>	<u>111</u>	<u>61</u>	<u>55.0</u>	<u>111</u>	<u>61</u>	<u>55.0</u>
Total	628	386	61.5	422	233	55.2	1050	619	59.0

they attended. The Postal Service returned 116 questionnaires as being undeliverable. Alumni completed 321 questionnaires in response to the mailing. Attempts were made to contact the remaining persons by telephone in March and April. Three hundred nine questionnaires were completed in this fashion.

One of the dangers in survey research is that respondents may differ considerably from non-respondents. Fortunately, in this instance, school data were available for all persons, including those who did not respond to the Alumni Survey Form. School and background statistics were analyzed for respondents and non-respondents to determine if there were any significant differences between the two groups. These comparisons are reported in Table 2. The only statistically significant difference found was between BOCES respondents and non-respondents in their respective Occupational Average Grade. While the difference was "statistically" significant, its practical significance is doubtful in that the respondent average is 79 and the non-respondent average is 78. There was no Occupational Average Grade for non-BOCES graduates. Other differences in means shown in Table 2 may be attributed to chance. On the basis of comparison shown in Table 2, the study was conducted under the assumption that the respondents to the Alumni Survey Form were representative of the total sample.

Cost/Benefit and Cost/Effectiveness Analyses. When inputs and outputs of a social process can be measured in market prices, a useful index for guiding decisions makers as to the worth of that process is the ratio of benefits in dollars to costs in dollars. Evaluation of vocational programs is one of the few areas in education where benefit/cost analysis may be appropriately applied. This is because one of the major objectives of vocational education is to prepare

Table 2. School Record Form characteristics of respondents and non-respondents to the Alumni Survey Form

Characteristics	BOCES		Non-BOCES	
	Respondents	Non-Res-pondents	Respondents	Non-Res-pondents
Occupational average grade ¹	79	78	--	--
Overall average grade	77	75	77	76
Percentile rank in class ²	35	26	42	36
Combined I.Q. ³	103	101	107	106
New York State reading achievement	37	41	50	50
New York State Math Achievement	30	37	46	45
Father's occupation ⁴	2.6	2.6	3.0	3.2
Father's education ⁵	3.2	3.2	3.4	3.5
Mother's education ⁵	3.5	3.4	3.6	3.9
Number	386	242	233	189
Percent of group	61	39	55	45

¹ Means differ at a .05 level of significance.

² The percent of students below the rank in class of the individual (or group) described.

³ I.Q. is measured by a variety of tests, however the averages and standard deviations of the tests are similar.

⁴ Occupational code is as follows:

- 1 - unskilled employees
- 2 - machine operators, semi-skilled employees, tenant farmers
- 3 - skilled manual employees and small farmers
- 4 - clerical and sales workers, technicians, and owners of very small businesses
- 5 - administrative personnel, small businessmen, semi-professionals and large farmers
- 6 - business managers, proprietors of medium sized businesses and lesser professionals
- 7 - higher executives, proprietors of large concerns, and major professionals.

⁵ Educational code is as follows:

- 1 - less than seventh grade
- 2 - junior high school
- 3 - some high school
- 4 - high school graduate
- 5 - some college
- 6 - four year college or university graduate
- 7 - graduate work.

students for employment and its success is reflected in the earnings of students. The benefit/cost analysis in this study was made by comparing the projected marginal lifetime earnings of BOCES alumni over component school alumni to the marginal cost of BOCES programs over component school programs. A ratio of one or above is considered favorable.

Cost/effectiveness analysis is an adaptation of cost/benefit analysis for those situations where the output cannot be evaluated in market prices. This is the general situation encountered in education. Unfortunately, cost/effectiveness analysis does not produce a ratio. Rather, costs and measures of effectiveness on a variety of criteria are displayed in tabular form for two or more possible solutions. Cost/effectiveness analysis does not usually show one option to be clearly superior to others but it does assist the decision-maker in evaluating various options on agreed upon criteria. The most "desirable" option may vary from person to person depending upon the weighting each gives to the criteria. Because many of the outcomes of vocational education cannot be measured by market prices, cost/effectiveness analyses were also made.

Findings

Cost Analysis. Comparisons between the costs per pupil and enrollments of occupational courses offered by BOCES A, BOCES B and BOCES C are reported in Table 3. The statistics reveal two striking patterns: there is a wide range in program costs within each of the three BOCES; and among BOCES, costs per pupil for a given program are lower for BOCES B than for the other two BOCES with the single exception of Machine Shop where BOCES A experiences the lowest cost.

Program costs within BOCES A range from a low of \$712 per pupil for Agri-

culture enrolling 150 students to \$3,935 for Conservation/Horticulture enrolling 9 students. There is no comparable course to Agriculture offered by the other two BOCES. BOCES B does offer a course in Horticulture, however, at a cost of \$1,345 and with an enrollment of 32 pupils. The disparity in cost appears to be caused by the small enrollment in the BOCES A program. The total cost in BOCES A was \$35,411 compared with \$43,042 in BOCES B. BOCES A could double or even triple its enrollment in Horticulture with little increase in expenditure.

There is a threshold cost for any program to bring together necessary instructional staff, equipment and space. Beyond this, the marginal cost per pupil is minimal until enrollment reaches a point where staff and facilities must be duplicated. To illustrate this phenomenon, a hypothesized relationship between costs and enrollments is shown for Conservation/Horticulture in Figure 1. Because actual marginal costs and optimum program size are unknown, estimates are used. The marginal cost for an additional student in the enrollment range between 1 and 20 is estimated at \$335. The marginal cost between 0 and 1 pupil is estimated at \$33,000. This is also the threshold cost. The optimal enrollment in a Horticulture program is assumed to be 20. Under this assumption, for enrollments beyond 20, staff and facilities must be duplicated causing the cost per pupil to rise. The duplication of facilities and teachers is reflected in the figure by a jump in both the Total Cost Curve and the Cost per Pupil Curve between enrollments of 20 and 21. The marginal cost for the 21st pupil is \$32,000 compared to \$335 for the 20th pupil. The average cost for 21 pupils is \$3,380 compared with \$1,950 for 20 pupils. The low \$1,950 average cost per pupil at a program enrollment of 20 will not likely be realized again until

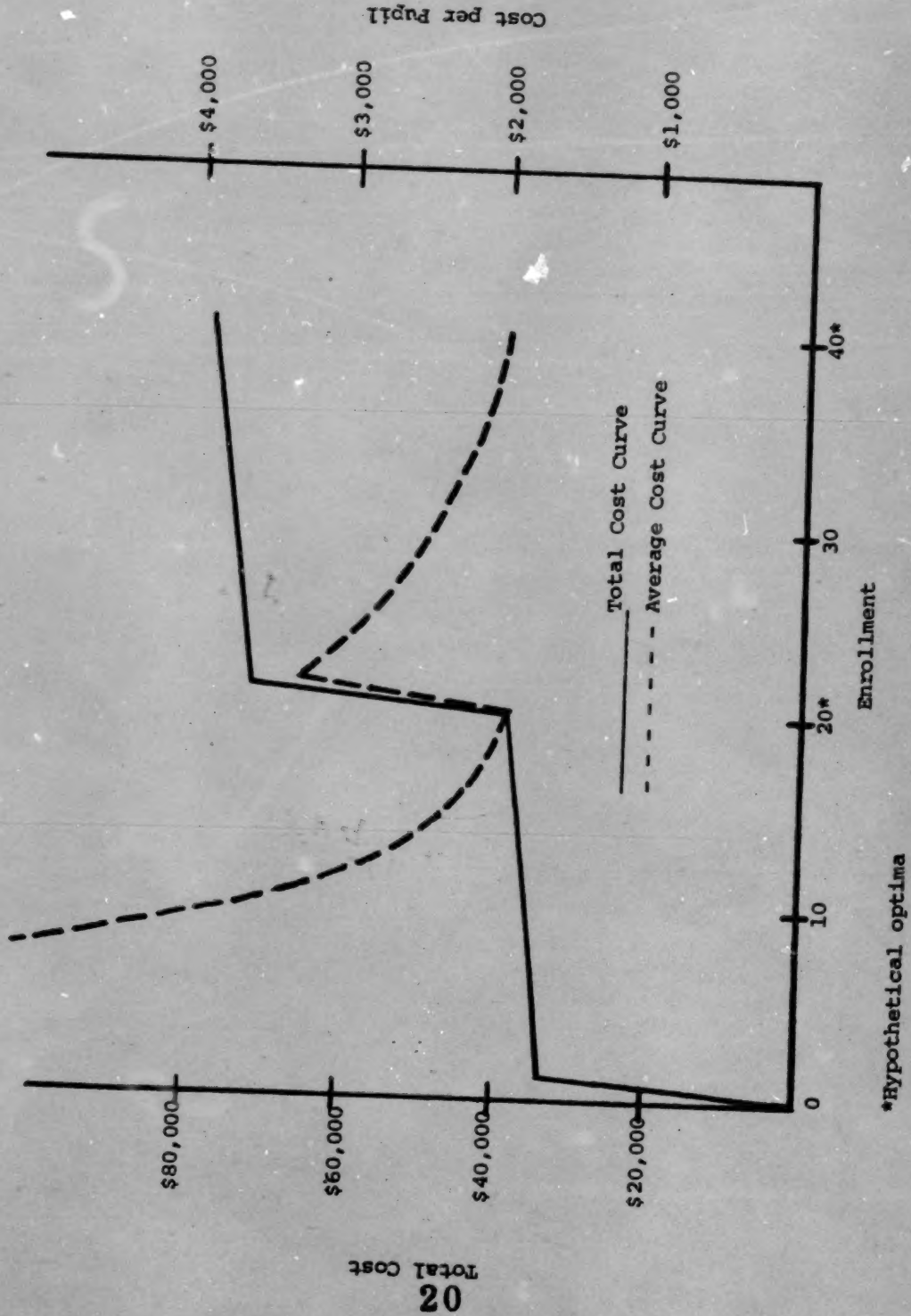
Table 3. Enrollments and costs per pupil for occupational programs offered by three BOCES

Program	BOCES A		BOCES B		BOCES C	
	Costs	Enrollment	Costs	Enrollment	Costs*	Enrollment
Auto Mechanics and Repair	\$1,160.	211	\$ 948.	636	\$1,174.	242
Cosmetology	1,046.	124	808.	310	885.	162
Data Processing	2,890	43	1,163.	118	1,999.	16
Food Services	1,258	85	910.	222	1,182	96
Health Services	1,195	72	824.	75	1,167	21
Machine Shop	1,654.	61	1,898.	106	1,843	91
Conservation/ Horticulture	3,935.	9	1,345.	32	---	---
Small Appliance Repair	1,887.	17	1,489.	23	---	---
Trade Electricity	1,322.	56	922.	168	1,668	20
Agricultural Mechanics	1,471.	60	---	---	1,568	30
Agriculture	712.	150	---	---	---	---
Animal Laboratory	890.	42	---	---	---	---
Plastic Technology	2,169	19	---	---	---	---
Distributive Education	2,848.	9	---	---	---	---
Building Trades	---	---	1,167.	207	1,571.	25
Commercial Art	---	---	1,103.	66	---	---
Dental Assisting	---	---	751.	44	---	---
Dental Lab Technician	---	---	1,294	20	---	---
Practical Nursing	---	---	715.	231	945.	100
Mechanical Design	---	---	769.	33	---	---
Printing Trades	---	---	1,410.	45	---	---
Technical Electronics	---	---	771.	120	---	---
Welding	---	---	813.	50	1,271.	54
Radio-T.V.	---	---	---	---	1,012.**	41
Business Machines	---	---	---	---	1,076.**	33
Small Engine Repair	---	---	---	---	839.**	31

*Equipment costs were not available; figure includes an average per pupil equipment cost obtained from BOCES B and BOCES A except where noted by **.

**Equipment costs are not included in these estimates.

Figure 1. Hypothetical total cost curve and average cost per pupil curve for a program in Conservation/Horticulture



enrollment reaches approximately 40 pupils.

The concept of marginal cost and economies of scale apply to all educational programs; however, its understanding is particularly critical in assessing occupational programs because of the variety of programs offered, the uniqueness of staff and facilities required for each program, and the relatively small enrollment in each program. The faculty, facilities and equipment are not easily interchangeable among programs. If a cost/effectiveness analysis of occupational education in general were being made, it would be appropriate to use the cost per pupil which corresponds to the lowest point on the average cost curve as a measure of input. But, because specific occupational programs were analyzed, the actual average costs were used in this analysis.

Another dramatic example of economies of scale was the Data Processing program. The total cost of this program to BOCES A was \$124,282 for 43 students compared with \$137,215 for 118 students in BOCES B. BOCES A employs two teachers for this program and offers instruction at two locations. BOCES B employs three teachers and offers instruction at only one location. Equipment rental for BOCES A actually exceeds that of BOCES B, \$55,521 to \$47,217. It would appear that the BOCES C program was relatively efficient compared to the BOCES A program, however, BOCES C students received instruction in key punch operation and accounting procedures only and did not have access to a computer as did students in BOCES A and B.

The other BOCES A programs which appeared to be particularly costly are small enrollment programs: Distributive Education, \$2,848 per pupil with an enrollment of 9; Plastic Technology, \$2,169 per pupil with an enrollment of 17. Programs in Distributive Education have been dropped recently from the

offerings of the other two BOCES because of low enrollments and the high cost factor.

Thus, a principal explanation for the lower cost of BOCES B programs is economies of scale. A manifestation of this is that enrollments in BOCES B are sufficient to permit facilities to be used for four shifts of students rather than for two which characterize BOCES A and C. Average salaries for the three BOCES are approximately the same ranging from \$11,540 in BOCES B to \$11,822 in BOCES A with BOCES C at \$11,731. Another factor contributing to lower costs in BOCES B is that the space provided for most of their programs is less than that recommended by the state. BOCES B is in the process of enlarging its facilities. BOCES A and C generally meet state standards with respect to space and in several cases exceed those standards.

A mixed pattern developed when costs of BOCES A programs were compared with those of BOCES C. For three programs the costs were within 10% of one another with BOCES A costs being higher for Food Services and Health Services and BOCES C being higher for Auto Mechanics and Repair. For four programs, cost differences were substantial. BOCES A costs are higher for Cosmetology and lower for Machine Shop, Trade Electricity and Agricultural Mechanics. The lower costs for Machine Shop were largely the result of relatively small costs for space and equipment. For the other two low expenditure programs, economies of scale are probably the explanation. Economies of scale were not sufficient to explain the higher cost for Cosmetology, however. For this program, the explanation lies with differing staffing policies. BOCES A employs four persons for 124 students while BOCES C employs 3.5 persons for 162 students.

The most likely school alternative to a BOCES occupational program is a major in one of the programs offered by the home school. As an initial step in computing the cost of these majors, the average cost per pupil per period for various subjects was established. Also, a General Service cost per pupil was calculated for costs of services used by all pupils (including BOCES students). The results are reported in Table 4. These costs cannot be compared directly with the occupational costs reported in Table 3 since the latter are reported on a per pupil basis (equivalent to two or three periods of instruction) and include BOCES General Service costs.

Table 4 indicates that the variations among subject costs within schools exist but are less dramatic than for occupational subjects. English costs tend to be the lowest while Industrial Arts tend to be the highest. There are also considerable differences in costs among high schools. The range in average teachers salaries is greater for high schools than for BOCES; however, class size policies appear to be the major cause of variation in costs among schools. The computation of General Services costs was discussed earlier. It should be noted that, unlike other costs in the Table, these are reported on a per pupil basis.

The average annual cost per pupil for various high school majors was developed by constructing a typical schedule for each major on the basis of information supplied by component districts. The cost of each element of the schedule was taken from the BOCES A column in Table 3 for BOCES programs and from the "Average" column of Table 4 for home school subjects and for General Services. For example, a typical Math or Science major would take in grade 11 or 12: one unit of English costing \$143, one unit of Social Studies costing \$150,

Table 4. Program costs per pupil per period
for four selected component high
schools of BOCES A

Subject	High School				Average
	W*	X	Y	Z	
Art	\$ 338.	\$ 203.	\$ 200.	\$ 173.	\$229
Business	147.	158.	162.	172.	160.
English	155.	133.	147.	138.	143.
Foreign Language	183.	151.	168.	196.	174.
Home Economics	238.	209.	143.	240.	208.
Industrial Arts	238.	241.	207.	246.	233.
Math	198.	126.	144.	134.	150.
Science	208.	155.	174.	192.	182.
Social Studies	209.	129.	129.	132.	150.

Item					

General Services Cost per Pupil	\$ 990.	\$ 743.	\$ 747.	\$ 1,138.	\$904.
Average High School Teachers Salary	\$11,863.	\$12,556	\$11,448.	\$12,842.	---

*Equipment costs were not available. This cost was estimated by multiplying the per pupil average equipment cost of the other districts times the enrollment in the program.

one unit of Math costing \$150, and one unit of Science costing \$183. In addition, he would receive General Services costing \$904. Included in General Services are physical education, and one subject such as health, music, band or chorus in addition to specific items listed earlier in the report. The average total per pupil cost for a Math or Science major was \$1,530.

A typical major in Auto Mechanics and Repair would take in his home school one unit of English costing \$143 and one unit of Social Studies costing \$150. The General Service charge of \$904 brought the home school cost to \$1,197. To this was added the cost of the Auto Mechanics and Repair program, \$1,160, making the total cost \$2,357, or \$827 more than a major in Math or Science. The subject schedule for each major and corresponding costs are reported in Table 6. Table 6 also shows "added costs" beyond that of a typical academic major, i.e. Mathematics or Science.

The per pupil cost of regular high school majors vary little from \$1,517 for Business to \$1,664 for Industrial Arts. The added costs for all BOCES majors are considerable, ranging from \$379 for Agriculture to \$3,602 for Conservation/Horticulture.

Survey Results: School Record Profiles of BOCES and Non-BOCES Students.

There are considerable differences between students who selected BOCES A occupational courses and those who were non-college bound but who selected specializations in their home schools. For both groups, most viewed high school as the terminal point in their formal education. About 12 per cent of the BOCES students and 19 per cent of the non-BOCES students did decide to attend a two or four year college; however, this decision was usually made a year or two after graduation from high school.

Table 5. Typical course outlines and average annual costs per pupil for various high school majors for eleventh and twelfth grade students

ART MAJOR

<u>Course or Item</u>	<u>Cost per Pupil</u>
English (one unit)	\$ 143.27
Social Studies (one unit)	149.85
Art (one unit)	228.71
Business (one unit)	159.67
General Services*	904.44
Total Cost per Pupil	\$ 1,585.94

BUSINESS MAJOR

<u>Course or Item</u>	<u>Cost per Pupil</u>
English (one unit)	\$ 143.27
Social Studies (one unit)	149.85
Business (two units)	319.34
General Services*	904.44
Total Cost per Pupil	\$ 1,516.90

FOREIGN LANGUAGE MAJOR

<u>Course or Item</u>	<u>Cost per Pupil</u>
English (one unit)	\$ 143.27
Social Studies (one unit)	149.85
Math (one unit)	150.73
Language (one unit)	174.48
General Services*	904.44
Total Cost per Pupil	\$ 1,522.77

HOME ECONOMICS MAJOR

<u>Course or Item</u>	<u>Cost per Pupil</u>
English (one unit)	\$ 143.27
Social Studies (one unit)	149.85
Home Economics (one unit)	207.56
Business (one unit)	159.67
General Services*	904.44
Total Cost per Pupil	\$ 1,564.79

Table 5 (Continued). Typical course outlines and average annual costs per pupil for various high school majors for eleventh and twelfth grade students

INDUSTRIAL ARTS MAJOR

<u>Course or Item</u>	<u>Cost per Pupil</u>
English (one unit)	\$ 143.27
Social Studies (one unit)	149.85
Industrial Arts (two units)	466.08
General Services*	<u>904.44</u>
Total Cost per Pupil	\$ 1,663.64

MATH OR SCIENCE MAJOR

<u>Course or Item</u>	<u>Cost per Pupil</u>
English (one unit)	\$ 143.27
Social Studies (one unit)	149.85
Math (one unit)	150.37
Science (one unit)	<u>182.29</u>
General Services*	<u>904.44</u>
Total Cost per Pupil	\$ 1,530.22

BOCES OCCUPATIONAL MAJOR

<u>Course or Item</u>	<u>Cost per Pupil</u>
English (one unit)	\$ 143.27
Social Studies (one unit)	149.85
General Services*	<u>904.44</u>
Total Home School Costs	\$ 1,197.56
BOCES Occupational Program	(see Table 3)
Total Cost per Pupil	Varies (see Table 6)

*Includes Physical Education and one unit elective, e.g. health, music, band, chorus, etc.

Table 6. Average annual cost and marginal cost per pupil
by high school major for component districts
of BOCES A

Major	Home School Cost per Pupil	BOCES Cost per Pupil	Total Cost per Pupil	Added Cost per Pupil*
Home School Majors				
Art	\$1,586.	---	\$1,586.	\$ 56.
Business	1,517.	---	1,517.	(13)**
Foreign Language	1,523.	---	1,523.	(7)**
Home Economics	1,565.	---	1,565.	35.
Industrial Arts	1,664.	---	1,664.	134.
Math or Science	1,530.	---	1,530.	---
BOCES Major				
Auto Mechanics and Repair	1,197.	1,160.	2,357.	827.
Cosmotology	1,197.	1,046.	2,243.	713.
Data Processing	1,197.	2,890.	4,087.	2,557.
Food Services	1,197.	1,258.	2,455.	925.
Health Services	1,197.	1,195.	2,392.	862.
Machine Shop	1,197.	1,654.	2,851.	1,321.
Conservation/ Horticulture	1,197.	3,935.	5,132.	3,602.
Small Appliance Repair	1,197.	1,887.	3,084.	1,554.
Trade Electricity	1,197.	1,322.	2,519.	989.
Agricultural Mechanics	1,197.	1,471.	2,668.	1,138.
Agriculture	1,197.	712.	1,909.	379.
Animal Laboratory	1,197.	890.	2,087.	557.
Plastic Technology	1,197.	2,169.	3,366.	1,836.
Distributive Education	1,197.	2,848.	4,045.	2,515.

*beyond the traditional academic major, i.e. Math or Science.

**parentheses indicate negative cost.

Although the non-BOCES students held a statistically significant (at the .05 level) advantage over BOCES students in average I.Q., both groups scored above the national average on this statistic. BOCES males and females averaged 103 while non-BOCES males averaged 106 and non-BOCES females averaged 108.

The most marked differences were in academic achievement. Despite a small three point spread in average I.Q., non-BOCES males averaged at the 52nd percentile on the New York State Reading Achievement Test while BOCES males averaged at the 34th percentile. For math achievement the figures were 46 and 27 respectively. The overall final average grade in all high school subjects for both male groups was 76. The average percentile rank in class was 31 for BOCES males and 32 for non-BOCES males. Percentile rank in class is defined as the per cent of students below the rank in class of the individual (or group) described.

A similar, though not so dramatic, pattern emerged for females. The spread in I.Q. was five points in favor of non-BOCES females. On the New York State Reading Achievement Test, non-BOCES females averaged at the 49th percentile while the BOCES females averaged at the 41st percentile. On the math test the figures were 46 and 35 respectively. Non-BOCES females averaged 50 on percentile rank in class while BOCES females averaged 39. Their overall average grades were 79 and 77 respectively.

All BOCES/non-BOCES differences in academic achievement measures were statistically significant at the .05 level except for reading achievement. For reading there was a 10 per cent probability that such differences could come about by chance.

In terms of family socio-economic status, non-BOCES students held a slight edge over BOCES students. Socio-economic status is measured in terms of father's

occupation and father's and mother's level of education. Both groups tended to come from families whose fathers held jobs as semi-skilled or skilled manual employees, machine operators, farmers, clerical and sales workers, technicians, and small businessmen. The typical BOCES parent did not complete high school. The typical mother of non-BOCES females did not complete high school; the typical mother of non-BOCES males did. Socio-economic status differences were not statistically significant for BOCES and non-BOCES students. These statistics are reported in Table 7 for BOCES and non-BOCES students by sex.

The typical BOCES student achieved only modest success in school. Even his grades at the BOCES centers were only slightly higher than his overall average. Compared to his classmates in general, including those defined as non-college bound, he was less well-suited to the usual verbal and mathematical emphases of the school. On the surface at least, it would appear that BOCES students would be ones who would drop out of school in substantial proportions if they did not have a non-academic option. If this were the case, the high school dropout for the nine component districts collectively should show a decline as vocational options became increasingly available. This hypotheses was tested using enrollment data by grade for a nine year period. This extending back two years prior to the beginning of BOCES occupational courses. Adjustments were made for population growth due to in-migration.

Dropout rates are portrayed graphically in Figure 2. It appears that the presence of a BOCES option has not resulted in an overall decline in the dropout rate, but rather has been accompanied with a gradual increase since 1971. A marked change in the time of dropping out is evident, however, which does correspond to the availability of a BOCES option. There was a decline in the

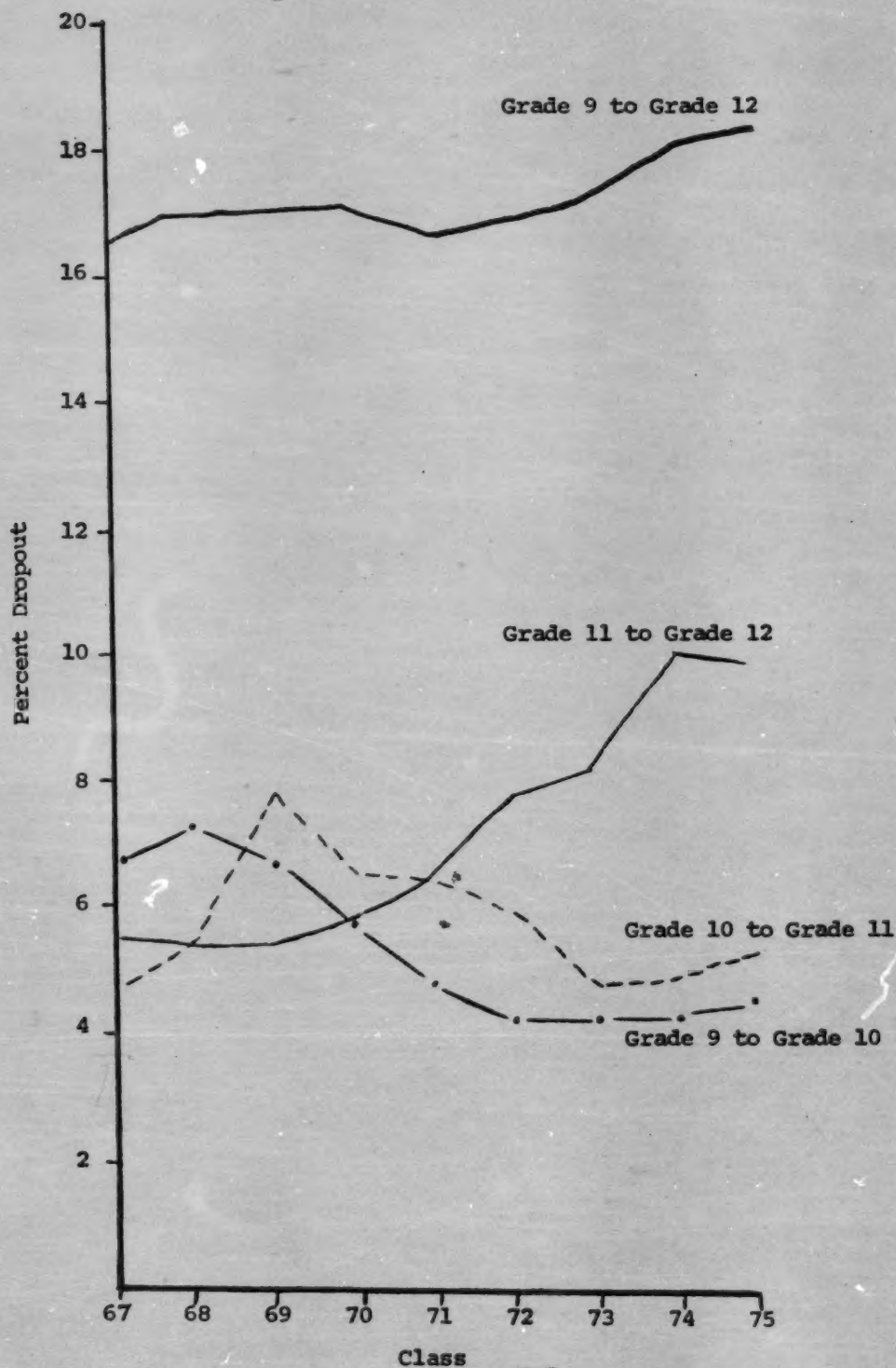
Table 7. School Record Form characteristics of BOCES and non-BOCES students by sex

Characteristics	Males		Females	
	BOCES	Non-BOCES	BOCES	Non-BOCES
Occupational average grade	78	--	81	--
Overall average grade	76	76	77	79
Percentile rank in class	31	32	39	50
Combined I.Q.	103	106	103	108
New York State reading achievement	34	52	41	49
New York State math achievement	27	46	35	46
Father's occupation ¹	2.7	3.0	2.6	3.0
Father's education ²	3.1	3.5	3.2	3.3
Mother's education ²	3.5	4.0	3.5	3.4
Number	215	106	167	126

¹For occupational code, see Table 2, footnote 4.

²For education code, see Table 2, footnote 5.

Figure 2. Percent of high school students dropping out of component districts of BOCES A



percent of students dropping out in grades nine and ten and a sharp increase in students dropping out in grade eleven. Dropouts were definitely deferring their action, perhaps in anticipation of the occupational option. For whatever reasons they stayed in school longer, the reason was not sufficient to keep them in school through graduation. One, two or three years of high school is unlikely to have much of a beneficial effect on the employability and earnings of a person unless those years are capped with a diploma.

Survey Results: Student Performance Compared with District Objectives.

Seven performance objectives had been established previously for the occupational programs conducted by BOCES A. While all of the persons in this survey graduated prior to the establishment of those objectives, it was enlightening to view present expectations against past performance. In the survey, data were collected which make comparisons possible on five of the objectives.

Objective: Upon completion of an occupational education program 65 per cent of the students will indicate that they would tend to take the same program again if they had to make the choice over.

It was not possible to know how students felt at the time of their graduation; however, it was possible to record how they felt after two, four and six years for BOCES students, and after two, four, six and eight years for non-BOCES students. Overall, BOCES occupational programs exceeded their objective every year by at least seven per cent. Non-BOCES students showed far less satisfaction with their course selection. For the Class of 1973, 50 per cent of the non-BOCES students indicated that they would not re-enroll in the same program compared with 28% of the BOCES students. For the entire period of the survey, 40 per cent of the non-BOCES students would not re-enroll compared with 27% of

the BOCES students.

One hundred ninety-five respondents reported dissatisfaction with field of study pursued during high school by responding "No" to "Would you re-enroll in the same program?" Two-thirds of the BOCES students expressing a preference for a field for re-enrollment indicated another BOCES field with the remainder opting for a conventional high school major. Forty-four per cent of the non-BOCES students stated a preference for a BOCES field while the balance of this group would choose a different conventional high school major.

Objective: Seventy-five per cent of the graduates of any licensed occupation program will pass the appropriate examination.

Cosmetology is the only program which prepares students for a licensed occupation. Sixty-five licenses were issued in Cosmetology out of a potential 107 or 60.7 per cent. Only four persons indicated that they failed the examination; 38 indicated that they did not take the examination. On the basis of these statistics, the program in Cosmetology in the past has not met the rate of licensing standard established by BOCES A although those students who did sit for the examination experienced a very high degree of success, 94 per cent passing.

Objective: Within six months after graduation 60 per cent of the graduates, available for and having sought employment, will be employed full time.

For BOCES males, the objective of 60 per cent employment was easily met for all years and in toto. Actually, 82 per cent had located their first full time employment within the six month period. This compares with 81 per cent for non-BOCES males. It is more difficult to assess success on this objective for females because respondents were not asked if they "sought" employment but

it appears that the objective was met. Sixty-four per cent of the BOCES females were employed within six months of graduation. Of the 36 per cent unemployed, 19 per cent never held a full time job. Many of these persons may never have sought employment. Sixty-four per cent of non-BOCES females also gained employment within the first six month period. Of the 36 per cent unemployed, 15 per cent had never held a full time job and may never have sought employment.

Programs which showed the best employment results were Auto-Body, Auto-Chassis and Machine Shop, each showing over 80 per cent of their graduates employed within six months of graduation. Programs which had poorest employment rates were Cosmetology, Data Processing, Food Service and Health Service. It should be noted that these areas exhibit large female enrollments--many of whom have never obtained employment and may not be truly potential members of the labor force.

Objective: Within six months after graduation 35 per cent of the graduates, available for and having sought employment in their specialization, will be employed full time in their area of specialization.

Objective: Within six months after graduation another 15 per cent of the graduates, available for and having sought employment in their specialization, will be employed full time in a position they consider related to their area of specialization.

If it is assumed that the first job was acquired within six months of graduation, a reasonably good estimate of success on these two objectives may be made. Also, it is possible to examine the same issue with reference to the present job and to look for movement toward or away from employment in high school specialization.

For the period under study, 29 per cent of BOCES males who sought jobs

within their specialization were successful in finding such employment. In addition, 20 per cent found employment in a related area. Seven per cent did not seek employment within their specialization. Focusing on the most recent class, 1973, the situation seems to be somewhat worse. Only three per cent did not want employment in their area of specialization, but only 24 per cent obtained it. An additional 18 per cent found employment in related areas. Over the years there was a slight movement toward employment in the area of one's high school specialization. Thirty-one per cent held such employment at the time of the survey. Another 32 per cent were employed in related areas.

For BOCES females, the picture for the total period was more favorable. Of those seeking employment in their area of specialization, 42 per cent were successful with their first job. Another 11 per cent found employment in a related area. Fourteen per cent did not seek employment in their area of specialization. The situation had deteriorated slightly when the most recent class, 1973, was examined. For these females, 36 per cent found their first employment in their area of specialization and 13 per cent in a related area. Thirteen per cent did not seek employment in their area of specialization. In terms of present jobs at the time of the survey, 42 per cent were employed in their area of specialization and 16 per cent were in related areas.

Overall, both objectives were realized for females. For males, however, the objectives were not realized, especially for the Class of 1973.

The objective of achieving 35 per cent employment in area of specialization for the first job was met only in Agriculture (44 per cent), Cosmetology (38 per cent) and Health Service (50 per cent) with Auto-Chassis (32 per cent) and Food Services (33 per cent) only a few points below the established standard.

If one includes "related" areas, making the desired goal 50 per cent (35 per cent "in" plus 15 per cent "related"), the list includes Auto-Chassis (62 per cent) and Health Service (69 per cent) with Agriculture (44 per cent) and Food Service (46 per cent) as near-attainers.

As graduates moved through the job market from first job to present job, the most striking feature of the data was the near constant rate of "in area" for certain areas--Agriculture, Auto-Body, Auto-Chassis and Cosmetology. Apparently, graduates enter these fields and stay there. Graduates of Machine Shop and Trade Electricity increasingly found jobs in those fields so that their "in" employment rates approach the stated objective levels, 30 per cent and 29 per cent respectively, up from 11 per cent and six per cent. Only 10 per cent of employed graduates of the program in Machine Shop held jobs at the time of the survey which were unrelated to their high school specialization. Graduates in Food Service and Health Service moved away from employment in those fields, dropping from 33 per cent to 17 per cent and 50 per cent to 40 per cent employed "in area," respectively. These trends may reflect difficult entry into the skilled trades and disenchantment with lower wage rates and conditions in the human services industries.

Although not related to a specific objective, information was gathered on the source of best advice in finding employment. Nearly half of both BOCES and non-BOCES students claim that they received no good advice from any source. The most frequently named best source of advice was from parents and relatives. Of BOCES students, 26.5 per cent cited this source; for non-BOCES, 29.7 per cent. The best school source for both groups was occupational teachers. (Non-BOCES students may enroll in occupational courses such as Business Education, Industrial

Arts and Home Economics in their home high schools.) Occupational teachers were cited by 16.0 per cent of the BOCES students and 6.6 per cent of the non-BOCES students. The influence of teachers on the placement of BOCES students had grown to 20.6 per cent in the last class of the survey, 1973. High school guidance counselors were cited by only 3.9 per cent of the non-BOCES students and 1.6 per cent of the BOCES students.

Also of interest is the extent of participation by the two groups in further education and their rating of the helpfulness of their high school studies in preparing them for further education. Non-BOCES males were most inclined to participate in further training, 62.3 per cent compared with 39.8 per cent for BOCES males, 33.5 per cent for BOCES females, and 36.9 per cent for non-BOCES females. Attendance at two or four year colleges was the most common type of further education. Nearly one out of four non-BOCES males attended a college while less than one out of ten BOCES females did. Twelve per cent of BOCES males and 15 per cent of non-BOCES females attended a college. BOCES females who attended college were considerably more successful academically than those who did not. For the other three groupings there was surprisingly little difference in I.Q., achievement and grades in high school between those who attended college and those who did not.

Over 10 per cent of each category received on-the-job training. Again, non-BOCES males (17.9 per cent) were most likely to participate in such training. Another 9.4 per cent of the non-BOCES males received specialized occupational training in the military. Participation by the other categories in military training was much lower.

For both BOCES males and females, 70 per cent reported that their further training was in the area of or related to their high school studies. For non-BOCES males the corresponding percentage was 30.8 and for non-BOCES females, 66.7. Over half of the BOCES males and nearly half of the BOCES females reported their studies at the vocational center very helpful in pursuing further training. Less than one-fourth of the non-BOCES alumni rated their high school studies as such. Thirty-seven per cent of the non-BOCES males and 26 per cent of the non-BOCES females reported their high school studies to be not at all helpful. Corresponding statistics for BOCES alumni are 16.9 per cent and 17.9 per cent respectively.

BOCES and non BOCES alumni had similar characteristics in such matters as conversation topics, leisure time activities, and participation in organizations. Both groups focused attention on areas of immediate personal concern and involvement, talking most frequently about "work" and "family matters", pursuing the home-centered leisure time activities of listening to music, watching television and entertaining friends. Religious groups and adult athletics were the only organizations generating even moderate participation. Apparently, the average terminal high school student does not extend himself beyond this band of activity to any great extent. It should be noted that the average age of the subjects was 22. Full community participation and maturing of activities interests may be further down the road of life.

While both groups of students were similar, a few differences could be detected. The overall involvement and activity of the non-BOCES student was greater. This may reflect their slightly higher intellectual ability and higher achievement in school. The non-BOCES student was more concerned with political

affairs, sports and the fine arts. The BOCES student spent more time on his automobile and demonstrated slightly higher concern with his trade as reflected by his reading choices.

Cost/Benefit Analysis

In a preceding section it was shown that there are considerable differences between terminal students who selected BOCES occupational programs and those who did not. These differences continue to be apparent in employment patterns.

BOCES and non-BOCES males enter the labor market at approximately the same rate (92 per cent) immediately after graduation from high school; however, a somewhat larger proportion of non-BOCES males are subsequently enrolled in further formal education and the military causing their participation rate in the labor force to drop to 89 per cent and 87 per cent four and six years after graduation. By eight years after graduation, the participation rate of both groups is approximately 95 per cent. Participation rate is defined as the proportion of total group membership which is employed full time or part-time or is looking for employment.

BOCES males find their first jobs a little sooner than non-BOCES males. On the average both groups secure their first position within three months of graduation but 19 per cent of BOCES and 13 per cent of non-BOCES students are still looking for jobs six months after graduation. BOCES males have experienced slightly more total months of unemployment than non-BOCES males. At the time of the survey, 23.6 per cent of BOCES male alumni were unemployed compared to 19 per cent of the non-BOCES male alumni. At the national level the rate for 18 and 19 year old white males was 16.4 per cent; for 20 to 24 year olds, the rate was 14.7 per cent. The higher local rates reflect generally higher unemployment rates in Erie County. The County average, 13.1 per cent for May 1973, exceeded

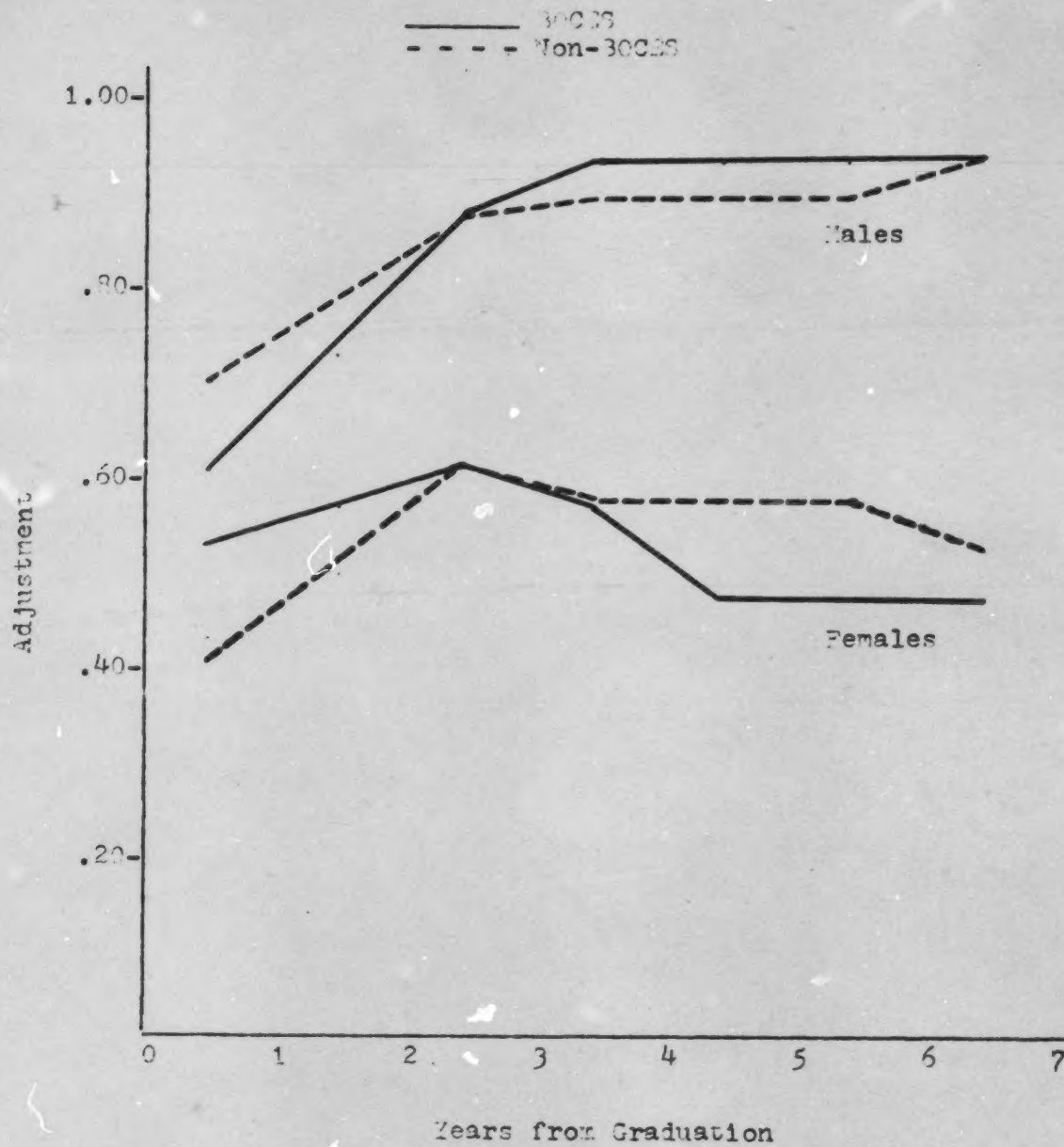
the national average by about four per cent. Per cent unemployed is defined as the percentage of those in the labor force represented by persons unemployed and seeking employment plus those temporarily laid off.

BOCES females enter the labor market at a slightly higher rate (82 per cent) than non-BOCES females (80 per cent). After four years, 74 per cent of the BOCES females are still in the market and after six years, 58 per cent are. At four years, the drop is larger (to 65 per cent) for non-BOCES females. At six years the participation rate drops only slightly for non-BOCES females to 63 per cent making it five per cent higher than for BOCES females. At eight years the rate drops sharply to 48 per cent. The principal reason for non-participation by both female groups is household responsibilities.

It takes both female groups between four and five months on the average to find their first full time job, but BOCES females tend to secure their first job somewhat sooner than non-BOCES females. Of the BOCES females, 17 per cent do not find their first full time job until more than six months after graduation and 19 per cent have never held a full time job. Of the non-BOCES females, 21 per cent do not find their first full time job until after six months and 15 per cent have never held a full time job. BOCES females have experienced fewer total months of unemployment than non-BOCES females. About eight per cent of the BOCES females were unemployed at the time of the survey, 24 per cent of those in the labor force. Comparable figures for non-BOCES females were 15 per cent and 23 per cent respectively. At the national level, unemployment for white females between the ages of 18 and 19 stood at 13.8 per cent; for those between the ages of 20 and 24, it was 10.6 per cent.

Figure 3 projects the rate of employment for average BOCES and non-BOCES

Figure 3. Rate of participation in labor force adjusted for unemployment and partial employment by sex



students by sex for seven years after graduation. The rates adjust for non-participation, unemployment and partial employment. Males participate more fully in the labor market than do females. As years go by, their rate improves as they experience less unemployment, less partial employment and less non-participation for purposes such as further education and military service (e.g. for BOCES males the ratio increased from .61 during the first year to .93 during the fourth). Those females who are in the labor market experience more job security as the years go by, but approximately 40 per cent have abandoned the labor market for other duties after six years and 50 per cent after eight years.

The patterns shown by Figure 3 are similar to national patterns. At the national level, 54.2 per cent of the female population between the ages of 25 and 54 are in the labor force (no adjustment being made for unemployment and partial employment. Females reach their peak participation, 64.1 per cent, between the ages of 20 and 24. The participation in the labor force by BOCES and non-BOCES males is higher than the national average up to age 25. This is to be expected because of the lower participation rate of both local groups in college. Beyond age 25 the participation rate for males approximates the national average.

In order to control for the effects upon hourly wages of the higher socio-economic status and academic achievement of non-BOCES students, multiple regression analysis was used. Dependent variables were hourly wage for the first job and for the present job. Independent variables were enrollment in a BOCES program, father's level of occupation, percentile rank in class, average grade, and measured intelligence. Separate analyses were made for males and females.

The results are portrayed graphically in Figure 4. The only independent BOCES effect was on hourly earnings for the first job for males, amounting to 24¢ on the average. The differences between BOCES and non-BOCES males in socio-economic status and school performance factors were so small that it had no significant effect on earnings.

BOCES females actually earned about 20¢ per hour less than non-BOCES females for all years. This difference was completely explained, however, by the lower socio-economic status and academic accomplishments of the BOCES group. There was no independent BOCES effect on female earnings.

All hourly wages shown in Figure 4 are well below the \$5.01 average for production workers in manufacturing concerns in Erie County, 1973. (This is the only hourly wage statistic regularly collected by the Bureau of Labor Statistics for the county.) The corresponding average rate for May 1975 was \$5.80. These lower rates may well be a function of the young age of the sample relative to the entire work force for the county and the type of employment generally available in southern Erie County. Production workers are typically unionized. Of the entire sample, only 30.9 per cent of the males and 12.3 per cent of the females belonged to unions. The proportion of membership was about the same for both BOCES and non-BOCES students.

Table 8 reports the estimated average annual earnings for BOCES and non-BOCES male graduates. Full time employment was considered as 40 hours per week, 52 weeks per year, or 2080 hours. This was adjusted for non-participation in the labor force, unemployment and part-time employment. The ratios are reported in columns two and three and are displayed graphically in Figure 3. The wage

Figure 4. Projected hourly wage in 1973 dollars, for BOCES and non-BOCES students by sex, adjusting for group differences in socio-economic status and school achievement.

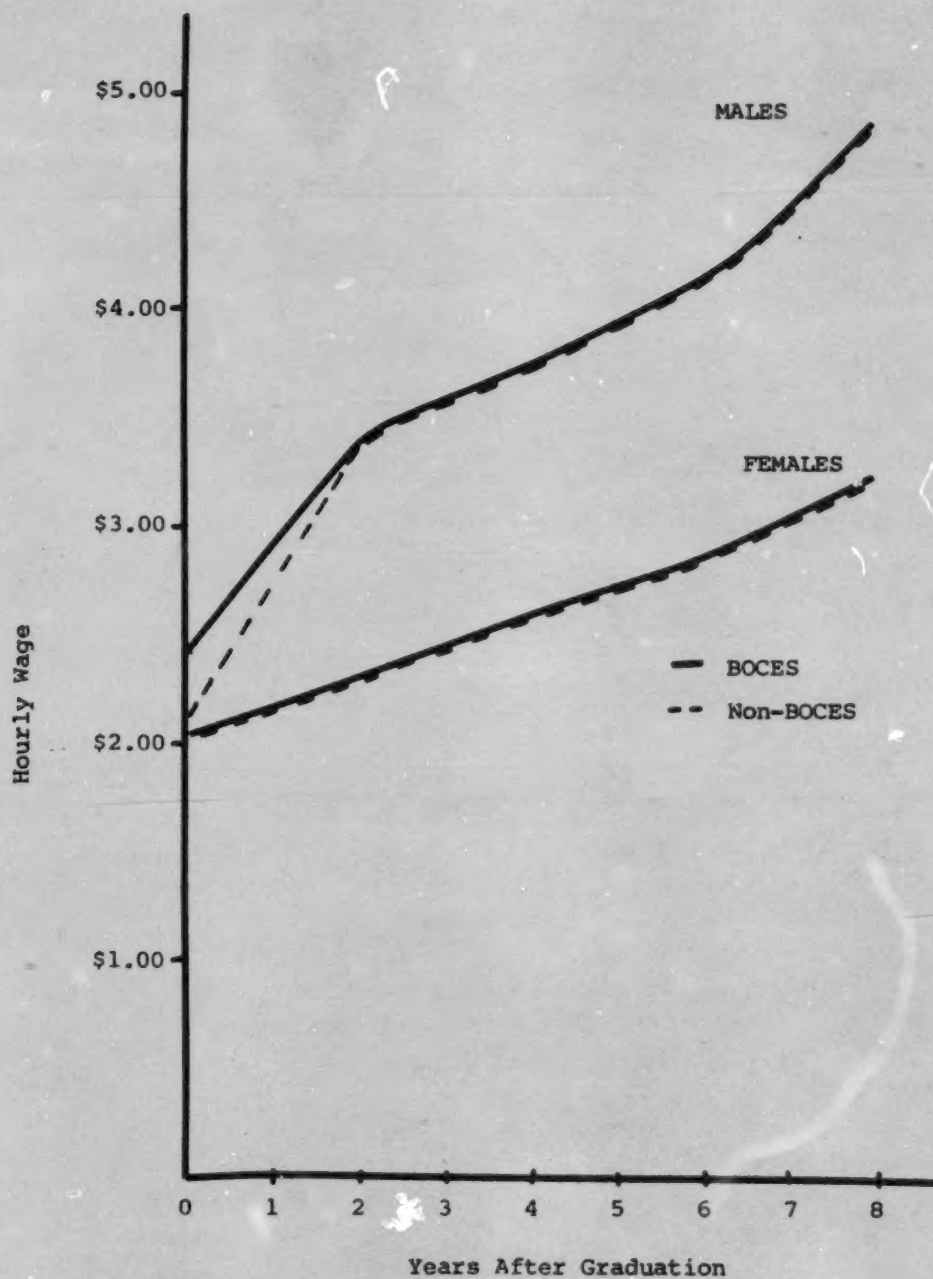


Table 8. Estimated average annual wage in 1973 dollars for BOCES and non-BOCES male graduates.

Years after Graduation	Average Participation Rate (1.0=full time em- ployment)		Average Hours Worked per Year (2080 hrs.= full time employment)		Average Hourly Wage, 1973 Dollars		Estimated Average Annual Wage		BOCES Estimate Minus Non-BOCES Estimate
	BOCES	Non- BOCES	BOCES	Non- BOCES	BOCES	Non- BOCES	BOCES	Non- BOCES	
1	.61	.69	1269	1435	\$2.40	\$2.10	\$3050	\$3000	\$ 50
2	.74	.78	1539	1622	2.90	2.75	4450	4450	0
3	.86	.86	1789	1789	3.40	3.40	6100	6100	0
4	.93	.89	1934	1851	3.75	3.75	7250	6950	300
5	.93	.89	1934	1851	3.95	3.95	7650	7300	350
6	.93	.89	1934	1851	4.20	4.20	8100	7800	300
7	.93	.93	1934	1934	4.50	4.50	8700	8700	0

rates are reported in columns six and seven and were displayed graphically in Figure 4. The estimated average annual wage was determined by multiplying the hourly wage rate times the adjusted hours employed. The rapid rate of inflation which is presently being experienced may make these estimates conservative. The assumption is that inflation will hit all groups similarly, affecting absolute values of wages but not relative position of groups.

Although working BOCES males earned more per hour the first year after graduation, their estimated annual average wage was equal to that of non-BOCES males because their participation rate was slightly lower and their unemployment rate was higher. After four years, the hourly wage rate for the two groups had equalized but BOCES graduates earned more on an average annual basis because of a higher participation rate in the labor market. Non-BOCES males had a lower participation rate at this point primarily because of a greater incidence of attendance in two or four year colleges. After seven years both participation rates and wage rates appear to have equalized for the two groups.

During the first seven year period BOCES males appear to earn on the average slightly more than non-BOCES males. This difference may more than be made up by non-BOCES males in subsequent years when the impact of the earnings of two and four year college attenders is felt. Substantially greater school costs will also have been experienced, however. In any event, the salary difference was not sufficient to compensate for the additional costs of the BOCES occupational programs. For example, the marginal cost of the Auto Mechanics program had previously been set at \$830 per year. Disregarding interest rates, etc., the two-year marginal cost would be \$1,660. The gross excess

earnings of BOCES male graduates was only \$1000. When these costs are converted into comparable present values for 1973, assuming an eight per cent rate of interest, the program costs become \$1,800 and the excess earnings, or benefits, become \$700. This yields a highly unfavorable benefit/cost ratio of .39.

The same statistics are reported for females in Table 9. Hourly wages for BOCES females were approximately the same as for non-BOCES females, for all years when differences in socio-economic status and school achievement were controlled. Except for the first two years from graduation, the participation rate of BOCES females in the labor market was lower. The combined effect was that, for the first three years after graduation, average annual earnings of BOCES female graduates were higher than for non-BOCES graduates. After that their earnings were substantially less. If a benefit cost ratio were to be computed, it would be negative.

The above calculations are made on the basis of the reported experience of BOCES alumni of all programs. It is likely that individual programs will exceed and fall below the average. For females, the earnings of those who had enrolled in the Data Processing program were the only ones to have kept pace with non-BOCES earnings. For males, the earnings of persons who had enrolled in the Auto-Chassis program appear to have kept pace with non-BOCES students. Earnings of those who had enrolled in Trade Electricity appeared generally to have exceeded earnings of the non-BOCES alumni. For Trade Electricity, after seven years, the benefit/cost ratio was about 2.0 and growing, assuming the cost of money at eight per cent. This was the only BOCES program that had a benefit/cost ratio in excess of 1.0.

Table 9. Estimated average annual wage in 1973 dollars for BOCES and non-BOCES female graduates

Years after Graduation	Average Participation Rate (1.0=full time em- ployment)		Average Hours Worked per Year (2080 hrs.= full time employment)		Average Hourly Wage 1973 Dollars		Estimated Average Annual Wage		BOCES Estimate Minus Non-BOCES Estimate
	BOCES	Non- BOCES	BOCES	Non- BOCES	BOCES	Non- BOCES	BOCES	Non- BOCES	
1	.54	.41	1123	853	\$2.05	\$2.05	\$2300	\$1750	\$550
2	.58	.51	1206	1061	2.15	2.15	2600	2300	300
3	.62	.62	1290	1290	2.30	2.30	3000	2950	50
4	.58	.59	1206	1227	2.45	2.45	3000	3000	0
5	.47	.59	978	1227	2.60	2.60	2550	3200	(650)
6	.47	.59	978	1227	2.75	2.75	2700	3350	(650)
7	.47	.53	978	1102	2.90	2.90	2850	3200	(350)

Other interesting employment related statistics emerged from the survey analysis. For BOCES and non-BOCES alumni of both sexes, a surprisingly small number of applications were filled out. Averages ranged from 1.0 to 1.7 among graduates of various programs of study. The number of full time jobs held by all groups did not increase as the years from graduation increased suggesting that the bulk of the turnover was during the first two years of employment. Support to this observation was given by the average number of months in the present job which did increase steadily over the years.

Startling sex differences were evident in rate of promotion. Women were not promoted at the rate of men. Over three-fourths of BOCES females had not received a promotion--even of those in the class of 1969. Over half of the BOCES males of that class reported promotions as did 68.5 per cent of the Class of 1971. Similar patterns existed for non-BOCES alumni. For the Class of 1971, 70 per cent of the non-BOCES females reported no promotions while 73.1 per cent of the males reported promotions. BOCES males gained their promotions primarily through change of jobs. For the other three groups, promotions tended to be evenly divided between those receiving on the job promotions and those acquiring them through change of job.

Cost/Effective Analysis

The cost/benefit analysis showed that, for males, the earnings of BOCES students were slightly higher than for non-BOCES students, but not enough to equal the higher costs per student of BOCES programs. For females, the earnings of BOCES students were actually less than for non-BOCES students, but the discrepancy could be explained wholly by socio-economic and school achievement factors; but, again, the higher program costs were not rewarded with economic gain.

In arriving at these conclusions, it should be noted that they are based on marginal social cost including expenditures from federal, state and local sources. This was a deliberate research strategy agreed upon at the outset of the study. The rationale was that, in the last analysis, taxes come from the same sources no matter which level of government levies them. Nevertheless, whether or not to organize a vocational program is a local decision. In making that decision, most local school boards are likely to be more concerned about the local tax cost than about the social cost. When only local costs are considered, BOCES programs do not appear to be so costly. The federal government makes a substantial contribution toward the purchase of equipment and buildings. Through BOCES aid, the state returns to participating districts approximately 70 percent of operating costs. The actual percentage varies from district to district. This means that of the \$900 by which the average BOCES program exceeds an academic program in cost, little is borne by the taxpayer through local taxes.

Higher economic gain is not the sole reason for providing vocational options, however. At the outset of this study, BOCES identified other objectives:

1. a reduction in the high school dropout rate;
2. a satisfying high school experience;
3. development of manpower with specific skills;
4. a more rewarding life in terms of participation in civic activities, and variety in conversation topics and leisure activities.

None of these objectives, with the possible exception of number 3, can be evaluated in market prices, therefore one must turn to a variant of cost/benefit

analysis--cost/effectiveness analysis.

There are three general approaches used in cost/effectiveness analysis. The first assumes that the effectiveness of any of the alternatives examined are comparable but the costs vary. In this type of analysis the lower cost approach is the most desirable. The second holds costs constant and looks for variation in expected effectiveness. In this type of analysis, the approach most nearly obtaining program objectives is the most desirable. In a third approach, both costs and effectiveness are assumed to vary. When this is the case, the decision-making becomes exceedingly difficult. All three approaches have been used in this study at varying stages in the decision process. A decision array is presented for each.

BOCES Versus Home School Programs. The first decision is whether to provide a vocational option at all - at least of the expensive variety offered by BOCES. This is the most complex decision because, on the input side, the BOCES programs are substantially more costly but they do offer certain non-economic advantages. Table 10 presents a decision array comparing inputs and outputs of home high school offerings for non-college bound students with those of BOCES. Both males and females who attended BOCES programs give stronger endorsement to their high school experience than their counterparts. Vocational programs also provide a greater variety of skilled manpower for business and industries of the area. Of BOCES graduates, over half work in their area of high school specialization while only about one-third of graduates of non-BOCES programs do. Are these benefits worth the additional cost of approximately \$1800 per graduate? Since it is impossible to place a dollar value on high school satisfaction and exceedingly difficult to place a dollar value on the

Table 10. Variable effectiveness, variable cost decision array for existing home school and BOCES programs

Criteria	Existing Home School Programs	Existing BOCES Programs
Two year cost per pupil served in 1973 dollars	\$3160	\$4960*
Additional earnings (seven years after graduation)		
Males	0	\$1000
Females	0	(\$ 750)
Reduction in high school dropout rate	No	No
A satisfying high school experience	60% would re-enroll	73% would re-enroll
Development of manpower with specific skills	36% employed in or related to area of specialization	54% employed in or related to area of specialization
A more rewarding life in terms of participation in community organizations, conversations, and leisure activities	Generally more active than BOCES students	Generally less active than non-BOCES students

*When state and federal subsidies are removed, the local cost is markedly reduced.

specialization criterion, the decision must rest upon non-economic values through a process of discussion and debate by a policy board representative of the spectrum of interests in the community, i.e. the school board.

On the criterion of extent of participation in organizations, conversations and leisure activities, BOCES students do not rate as well as non-BOCES students. The latter are more active in all categories, but as previously noted, this may be a function of differences between BOCES and non-BOCES students in socio-economic status and other non-school related factors rather than of the programs themselves.

Assuming that it is decided to offer vocational offerings in spite of their higher costs (which is likely because of the subsidization by state and federal aids and the broad based support of such offerings), alternatives designed to improve their efficiency are examined.

Curtailing Expenditures While Maintaining Effectiveness. The occupational program of BOCES has grown dramatically from its inauguration in 1968. It now serves nearly 1000 students daily in two modern and well-equipped facilities. Its growth corresponded with a general boom in the high school population; the programs which were offered were new and there was little basis on which to judge the demand for various courses; resources were plentiful. Within this expansive climate, the vocational centers were located under the assumption that eventually there would be three, the two which exist, plus one to serve the southern part of the district. But the optimistic projections were not to be realized. Enrollments began to level off in 1972-73, crested in 1974-75, and declined in 1975-76. The third center is not likely to be built in the near future, if ever, because the projected demand for occupational programs does not justify it.

Projections show future enrollments fluctuating within fifty students of the present level.

Based on past experience in BOCES, 20 students per session (for a total of 40 per day per teacher) would not be an unreasonable teaching load even in the shops where the nature of the equipment used requires the instructor to provide particularly close supervision. In courses such as Data Processing and Distributive Education, there is little or no justification for class sizes smaller than those typical of standard high school programs, 25-30. To tolerate class sizes lower than these is to increase costs without a corresponding increase in the quality of the program. At present, only the program in Agriculture enrolls more than 40 students per teacher per day. Machine Shop, Agricultural Mechanics, and Mechanical Technology come close to the "optimal" figure. For the same program, but at different centers, the students serviced per teacher vary markedly. In Center West one teacher teaches 48 students in Cosmetology while in Center East, two teachers teach 39 students. For Health Services, one teacher teaches 28 students in Center East while two teachers teach 41 students in Center West. For other duplicate programs, the pupil/teacher ratios are similar. If all programs enrolled students at the optimal level, the present faculty could service 300 more students (approximately 1300 total) than they presently do. Existing facilities are large enough to accommodate 1360 students using New York State recommended standards.

When pupil populations were growing, students siphoned off by BOCES programs offered no threat to the job security of teachers in component districts. Indeed, enrollment in BOCES programs helped to relieve generally over-crowded conditions. With stabilized or declining enrollments, however, there will be

empty classrooms and unnecessarily small class sizes in component high schools. This will probably be accompanied by threats to reduce the teaching force. A natural reaction of teachers, administrators and school boards of component districts may well be to make as full use of home facilities as possible by discouraging enrollment in BOCES programs. This phenomenon may explain the first decline in the proportion (and in actual numbers) of students enrolled in BOCES programs experienced during 1975-76. Until then, the proportion of eleventh and twelfth graders choosing BOCES programs had risen from 16.3 per cent in 1970-71 to 22.2 per cent in 1974-75. For 1975-76 the percentage dropped to 21.7.

This points to one of the basic flaws in the provision of vocational education in New York State outside the large cities. The control of the flow of students, the life of any educational program, is totally beyond BOCES. Vocational education is ancillary to the general educational offerings of the sending districts. What coordination and articulation there is between BOCES offerings and sending school offerings is voluntary and at the discretion of the sending schools. What contact there is for recruiting purposes between BOCES personnel and students and their parents is at the discretion of the sending school. All communications are filtered through the sending school. This has resulted in uninformed parents, students, and teachers, overlap of courses, violently fluctuating enrollments in vocational courses, and an inability by BOCES to predict and plan for student demand from year to year.

All of the component districts offer vocational type courses. Some districts make extensive provision, even to the extent of duplication of BOCES courses. Several offer courses in Graphics as does BOCES at Center East. One provides an extensive program in Agriculture, Agricultural Mechanics, Conservation

and Plastic Technology as does BOCES. Most of the districts offer at least a year sequence in electricity. Several provide courses in food and food service. In addition, all districts offer a selection of courses in Business Education, Industrial Arts, Mechanical Drawing and Home Economics.

The proportion of students enrolling in vocational courses at the national and regional levels have been increasing. The trend is predicted to continue. This does not necessarily translate, however, into a continually growing proportion of students taking BOCES courses because the sending schools, which do control the flow of students, can be expected to fill their own capacity first.

With under-utilized faculty and facilities and with no prospect of a natural increase in enrollments, there appears to be two strategies open to BOCES. The first would be a fixed effectiveness approach whereby faculty and facilities would be trimmed in keeping with student demand. The alternative strategy would be to reallocate the presently committed resources so as to attract a larger number of students into BOCES programs.

Three strategies were analyzed which assumed fixed effectiveness: the status quo, reducing staff in the existing two centers, reducing staff and consolidating facilities into a single center.

Even with declining overall enrollments, some programs are increasing in popularity. This has accentuated the decline in other programs, however. If class size were maintained at an optimal level, the present number of students could be served with seven fewer teachers, reducing the cost per pupil by approximately \$150. If instruction were given at a single location, the amount of space required could be reduced from 94,000 square feet to 82,000.

Consolidation would not permit a further reduction in teaching staff. Costs would be reduced by about another \$50 per pupil. Unfortunately neither of the existing sites is centrally located meaning that this strategy could be pursued only if suitable alternative uses could be found for them. Table 11 presents the cost estimates of the alternative fixed effectiveness strategies.

Increasing Effectiveness Without Increasing Total Cost. The final set of strategies examined were designed to improve the effectiveness of BOCES offerings and to increase student demand for them without increasing the existing level of committed resources. The strategies examined include: curriculum reform, a work experience program and a school/community liaison coordinator.

The underutilization of BOCES resources may be explained in part by the fact that the curriculum is organized around an older philosophy which views vocational education as a culminating educational experience designed to develop specific skills in students who will then be prepared to enter employment. The need for such training continues to exist but not to the extent provided by BOCES. Elsewhere, vocation is becoming seen as an integral part of life and of human experience. As such, vocational education should be integrated throughout the school experience and made available to all students on a more general skill basis.

As the curriculum is presently organized, a student at age 15 or 16 must make a commitment of five half days per week for two years to learn job skills in a rather specific occupational area. No other high school sequence of study requires such an extensive commitment. This in itself must discourage many students from electing BOCES offerings. The quality of service to the traditional vocational student may be maintained or improved and the attractiveness of BOCES

Table 11. Fixed effectiveness, variable cost decision array for existing and reduced staffing and facilities

Criterion	Existing BOCES Programs	Reduced BOCES Staff	Single Center
Estimated average cost per pupil served in 1973 dollars	\$2480	\$2340	\$2290

offerings to other students may be enhanced by organizing offerings by independent units or modules according to occupational clusters, thereby making the time commitment flexible from as little as one semester to the standard two years.

For 1976-77, the equivalent of four teachers (it should be possible to provide most teachers with some released time) should be assigned to curriculum development. It is anticipated that these efforts would be rewarded with an increased enrollment of at least 160 students during the 1977-78 school year when the time allocated for curriculum development would be reallocated to instruction. Per pupil costs in 1977-78 would be reduced by approximately \$350 although total costs would remain constant.

The most certain way to increase the demand for BOCES courses is to assure suitable employment of graduates. This requires continual cultivation of contacts with potential employers. BOCES has made significant attempts at this through its various advisory committees and its placement counselors. The potential effectiveness of these efforts could be enhanced through providing each career-oriented BOCES student an opportunity for "on the job experience." Work experience could take many forms. For eleventh graders it may be as simple as having a cosmetology student spend a day at each type of working environment (private salon, franchised salon or department store salon); but for the senior, the spring semester should be spent "observing" (working) in an appropriate business firm or industrial plant part-time (probably without pay). Such an experience can be invaluable in helping the student develop specialized skills and attitudes appropriate for business or industry. Where tried, work experience programs have proven to be popular with employers because they give them opportunities

to see how potential employees actually perform before hiring them.

The equivalent of two and one-half persons full time should be assigned to provide for a vigorous work experience program. One person half time should be responsible to the program in each occupational cluster: agriculture, service industries (including health, food and cosmetology), automobile repair, building trades, and business/industrial. Because of the close relation between work experience and placement, the number of persons working directly in placement could be reduced from one and one-half to one. The one could serve as overall coordinator.

In order to implement the curricular and work experience reforms, there must be a strong liaison between BOCES and professional personnel in the component schools, students and parents. The lack of such liaison is probably the most glaring weakness uncovered in this cost/effectiveness analysis. Home school teachers, guidance counselors and prospective students do not really know that BOCES courses are being offered or their content; the consequences have already been noted. BOCES cannot force liaison, but it can aggressively encourage it. With stabilized or even declining enrollments, BOCES must deliberately cultivate new and effective communication linkages with target groups. Responsibility for developing these linkages should be specifically assigned to the equivalent of one person full time (probably one person half time in each center).

The curriculum reform should provide a design which permits the student to develop skills applicable to more types of employment than the present program permits. Highly specialized skills could still be obtained through on-the-job training. This should make the student more employable, increasing slightly

his additional earnings. A modular organization of the curriculum and a work experience program should make high school a more satisfying experience for students. The liaison person should reach more students, especially potential dropouts. With better information there should be a better match between student interest and the courses they take. The effectiveness of the curriculum and the use of resources should also be improved. These benefits are displayed in a variable effectiveness, fixed cost array in Table 12.

Table 13 presents a composite decision array which reports the projected costs and estimated effectiveness of alternative strategies for providing occupational education. There is no single policy which is uniformly better to guide the future development. On the positive side, BOCES has provided two fine vocational centers and a competent faculty which together provides nearly 1000 juniors and seniors with work-related skills. On the negative side, the costs run high because of low enrollments in most programs; there is little articulation with component high schools; and, the curriculum is organized around a dated philosophy. Costs could be lowered by reducing faculty and consolidating facilities. Such a strategy should not reduce present effectiveness, but neither would it do anything to enhance it. In keeping resources at the present level, there are reallocations which could be made to improve program effectiveness. Reallocation would permit a modernization of the curriculum, increasing its appeal to students, and better liaison with component school personnel.

Table 12. Variable effectiveness, fixed total cost
decision array for program reforms

Criteria	Curriculum Reform	Work Experience	Liaison Coordinator
Two year average cost per pupil served in 1973 dollars 1976-77 1977-78	\$4960 \$4250		
Additional earnings	slight improvement because skill development appropriate for larger number of jobs	slight improvement through better exposure to employers	no improvement
Reduction in high school dropout rate	very slight improvement through better designed curriculum	no improvement	slight improvement through better communication with potential dropouts
A satisfying high school experience	improvement through better designed curriculum	improvement through high interest and reality of experience	improvement through better course selection by students
Development of manpower with specific skills	skills less specific making student employable in more situations	improvement through on-the-job training	improvement through better course selection by students
A more rewarding life in terms of participation in community organizations, conversations, and leisure activities	no improvement	no improvement	no improvement

Table 13. Composite decision array showing projected costs and estimated effectiveness of alternative means of providing occupational education

Criteria	Existing Home School Programs	Existing BOCES Programs	Reduced BOCES Staff	Single Center	Reform Package
Two year average cost per pupil in 1973 dollars 1976-77 1977-78	\$3160 \$3160	\$4960 \$4960	\$4680 \$4680	\$4580 \$4580	\$4960 \$4250
Projected enrollments in eleventh and twelfth grades	NA	960-1060	960-1060	960-1060	1120-1220
Projected earnings seven years after graduation Males Females	0 0	\$1000 (\$ 750)	\$1000 (\$ 750)	\$1000 (\$ 750)	slight improvement because skill development appropriate for larger number of jobs and better exposure to employers
Reduction in high school dropout rate	No	No	No	No	slight improvement through better designed curriculum and better communication with potential dropouts
A satisfying high school experience	60% would re-enroll	73% would re-enroll	same as existing BOCES programs	same as existing BOCES programs	improvement through better designed curriculum, high interest and reality of experience, and better course selection by students
Development of manpower with specific skills	36% employed in or related to area of specialization	54% employed in or related to area of specialization	same as existing BOCES programs	same as existing BOCES programs	general skill development making student employable in more situations; specific skill development through work experience
A more rewarding life in terms of participation in community organizations, conversations, and leisure activities	Generally more active than BOCES students	Generally less active than non-BOCES students	same as existing BOCES programs	same as existing BOCES programs	same as existing BOCES programs

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Appendix A

School Record Form

School Record Forms were completed for all 1050 persons in the sample by personnel of the component districts from district files under the general supervision of the survey staff.

Survey Research Center
SUNY/B
4230 Ridge Lea Road
Buffalo, New York 14226

- 64 -

Project #

0 2 1 1

01-04

Fall, 1974

Occupational Education Cost-Effectiveness Study
Erie #2 BOCES

1. Class of 19 _____

(WRITE IN CLASS YEAR FROM STUDENT LIST)

2. Vocational/Occupational Center Attended (CIRCLE ONE):

- 1 East
- 2 West
- 8 Unknown
- 9 Did not attend Vocational/Occupational Center

(IF STUDENT DID NOT ATTEND VOCATIONAL/OCCUPATIONAL CENTER, SKIP ITEM 3, FILL IN ITEM 4, THEN SKIP TO ITEM 9 AND CONTINUE.)

3. Occupational specialization at Center: _____

4. Name: _____

Address: _____

Telephone: _____
Area code /

5. Teacher (at Vocational/Occupational Center): _____

6. Date entering Vocational/
Occupational Center:

month / year

CODE YEAR

--	--

08-09

--

07

SEE CODE 1

--	--

08-09

CODE R 8

--	--	--

10-12

CARD 5

0	0
---	---

13-14

SEE CODE 2

--	--	--

15-17

--	--	--	--

MONTH

YEAR 18-21

7. Date leaving Vocational/
Occupational Center:

month / year

8. Grade Average (Occupational subjects): _____

9. Home school: _____

10. Date of birth: month / year

11. Father's (guardian's) occupation: _____

12. Father's education: _____

13. Mother's occupation: _____

14. Mother's education: _____

15. Health problems (SPECIFY, IF ANY): _____

16. Reason for termination at school: (CIRCLE ONE
REASON FOR SCHOOL TERMINATION BELOW)

- 1 graduated
- 2 withdrew (dropped out)
- 3 withdrew for other reason (SPECIFY): _____

SERVICE USE ONLY

month year 21-25

month year 26-29
SEE CODE 3

month year 30-31

CODE YEAR
OF BIRTH
month year 32-35

SEE CODE 4
month year

SEE CODE 5
month year

SEE CODE 4
month year

SEE CODE 5
month year

SEE CODE 6
month year 36-39

17. Date of graduation/termination: _____
month / year

18. Rank in graduating class: _____

19. Number in graduating class: _____

20. Home school grade average: _____

21. Major course sequence: _____

22. Standard test results:

Name of test	Score
a. Otis-Lennon, Form J (RECORD IQ)	
b. Other IQ test (RECORD IQ, SPECIFY: NAME OF TEST: _____ FORM: _____)	
c. NYS Minimum Competency - Math (RECORD NYS STANDARD)	
d. NYS Minimum Competency - Reading (RECORD NYS STANDARD)	
e. Other Reading test (RECORD NATIONAL PERCENTILE AND SPECIFY: NAME OF TEST: _____ FORM: _____)	

OFFICE USE ONLY

month		year	

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SEE CODE 7

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SEE CODE 8

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Appendix B

Alumni Survey Questionnaire

The Alumni Survey Questionnaire has three forms. The first is the mail form for BOCES alumni; the second is the mail form for non-BOCES alumni; and the third form is the telephone interview form. Only the BOCES alumni form and the telephone interview forms are included in this appendix. The non-BOCES alumni form is the same as the BOCES alumni form except the term "high school" is substituted for the term "Vocational Center" where appropriate.

Questionnaires were mailed to the sample of 1050 persons in February 1975. Questionnaires to BOCES alumni carried a cover letter from the principal of the occupational center they attended. Questionnaires to non-BOCES, non-college bound alumni carried a cover letter from the principal of the high school they attended.

The Postal Service returned 116 questionnaires as being undeliverable. Alumni completed 321 questionnaires in response to the mailing. Attempts were made to contact the remaining persons by telephone in March and April. Three hundred nine were completed in this fashion.

Survey Research Center
SUNYAB
4230 Ridge Lea Road
Buffalo, New York 14223

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EDUCATIONAL SURVEY

GENERAL INSTRUCTIONS:

THE INFORMATION WE ARE SEEKING IS RELATED TO YOUR STUDIES IN HIGH SCHOOL AND TO THE KIND OF WORK YOU ARE DOING AND HAVE DONE. MOST OF THE QUESTIONS ARE FOLLOWED BY A LIST OF POSSIBLE ANSWERS. PLEASE CHOOSE ONE OF THE LISTED ANSWERS WHICH IS MOST APPLICABLE TO YOU AND WRITE THE NUMBER WHICH APPEARS DIRECTLY IN FRONT OF IT IN THE BOX TO THE RIGHT OF THE QUESTION, AS IN THE FOLLOWING EXAMPLE.

EXAMPLE:

How beneficial do you think vitamin C is?

- 1 very beneficial
2 somewhat beneficial
3 not at all beneficial
- 2

WRITING '2' IN THE BOX TO THE RIGHT WOULD MEAN THAT YOU THINK VITAMIN C IS 'SOMEWHAT BENEFICIAL'.

FOR ITEMS WHICH REQUIRE A WRITTEN ANSWER, PLEASE WRITE YOUR ANSWER IN THE SPACE PROVIDED.

PLEASE DO NOT WRITE IN THE 'OFFICE USE ONLY' BOXES.

1. Were you trained in high school or at the Vocational Center for an occupation that requires licensing? (for example: Cosmetology, Licensed Practical Nurse, etc.)

- 1 yes (CONTINUE WITH QUESTION 2)
2 no (SKIP TO QUESTION 5)

☐ 37

2. Did you take the appropriate examination for your licensed occupation?

- 1 yes (CONTINUE WITH QUESTION 3)
2 no (SKIP TO QUESTION 5)

☐ 38

3. Were you issued a license for your specialization?

- 1 yes
2 no

☐ 39

4. How helpful would you say your studies at the Vocational Center were in preparing you for the licensing examination?

- 1 very helpful
2 somewhat helpful
3 not helpful

☐ 40

5. Since attending the Vocational Center, have you taken part in any further training or education?

- 1 yes (CONTINUE WITH QUESTION 6)
- 2 no (SKIP TO QUESTION 9)

☐

41

6. Which one of the following best describes the most recent training or education you have had since leaving the Vocational Center?

- 1 on-the-job training
- 2 apprenticeship
- 3 public occupational school program
- 4 private occupational program
- 5 two or four year college
- 6 specialized occupational military training
- 7 other (SPECIFY:)

☐

42

7. To what extent is your additional training/education related to your area of specialization at the Vocational Center?

- 1 in my area
- 2 related to my area
- 3 unrelated to my area

☐

43

8. How helpful were your studies at the Vocational Center in preparing you for this additional training?

- 1 very helpful
- 2 somewhat helpful
- 3 not helpful

☐

44

9. How long were you out of high school before you obtained full-time employment?

- 1 began before leaving high school
- 2 less than one month
- 3 one to three months
- 4 four to six months
- 5 more than six months
- 6 have not had a full-time job

☐

47

10. How many applications did you fill out before you found your first full-time job?

- 1 one
- 2 two-five
- 3 six-ten
- 4 more than ten

☐

48

OFFICE USE ONLY	
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45-46

11. Who gave you the best advice and assistance when you were looking for your first job?

- 1 teacher of occupational course(s)
- 2 placement counselor at the Vocational Center
- 3 high school guidance counselor
- 4 employment agency
- 5 parent or other relative
- 6 no one gave me advice
- 7 other (SPECIFY:) _____

☐

49

12. How helpful was this advice and assistance to you in actually finding your first job?

- 1 very helpful
- 2 somewhat helpful
- 3 not helpful

☐

50

13. Since leaving high school, what is the total time you have been unemployed? (WRITE THE TOTAL NUMBER OF YEARS AND/OR MONTHS IN THE BOXES.)

☐

years

51

☐

months

52-53

14. Since leaving high school, what is the total time you have been employed only part-time and looking for work? (WRITE THE TOTAL NUMBER OF YEARS AND/OR MONTHS IN THE BOXES.)

☐

years

54

☐

months

55-56

15. At the present time, what is your employment situation?

- 1 employed full-time (SKIP TO QUESTION 17)
- 2 employed part-time, but looking for full-time employment (SKIP TO QUESTION 17)
- 3 employed part-time, and not looking for full-time employment (SKIP TO QUESTION 17)
- 4 temporarily laid-off (SKIP TO QUESTION 21)
- 5 unemployed, but looking for employment (SKIP TO QUESTION 21)
- 6 unemployed and unavailable for employment (ANSWER QUESTION 16, THEN SKIP TO QUESTION 21)
- 7 other (SPECIFY:) _____

☐

57

16. For what reason are you unavailable for employment?

- 1 serving in the military (SKIP TO QUESTION 21)
- 2 participating in further training or education
(SKIP TO QUESTION 21)
- 3 illness (SKIP TO QUESTION 21)
- 4 housewife or childcare (SKIP TO QUESTION 21)
- 5 not seeking employment (SKIP TO QUESTION 21)
- 7 other (SPECIFY:) _____

☐

58

17. What is your present job title? (WRITE YOUR JOB TITLE
ON THE LINE BELOW)

Briefly describe the kind of work you do.

OFFICE USE ONLY	
9	9
89-88	

18. How long have you been employed in your present job?

(WRITE THE NUMBER OF YEARS AND/OR MONTHS IN THE BOXES.)

81

years

82-83

months

19. To what extent is your present job related to your area of
specialization at the Vocational Center?

- 1 in my area
- 2 related to my area
- 3 unrelated to my area

☐

66

20. Please indicate your hourly wage rate for your present job.
(SELECT THE ONE HOURLY PAY RANGE WHICH CONTAINS YOUR RATE.
SALARIED WORKERS SHOULD ESTIMATE AN HOURLY RATE.)

- 1 less than \$2.00
- 2 \$2.00 to \$2.49
- 3 \$2.50 to \$2.99
- 4 \$3.00 to \$3.49
- 5 \$3.50 to \$3.99
- 6 \$4.00 to \$4.99
- 7 \$5.00 to \$5.99
- 8 \$6.00 to \$7.99
- 9 \$8.00 or more

☐

65-68

21. How many full-time jobs (other than your present job, if employed) have you had since leaving high school?

- 1 one (SKIP TO QUESTION 24)
- 2 two or more (CONTINUE WITH QUESTION 22)
- 3 none (SKIP TO QUESTION 28)

☐	67
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22. What was your second full-time job called?
(WRITE THE JOB TITLE ON THE LINE BELOW)

Briefly describe the kind of work you did on
your second full-time job.

OFFICE USE ONLY	
9	9 68-69

23. To what extent was your second full-time job related
to your area of specialization at the Vocational Center?

- 1 in my area
- 2 related to my area
- 3 unrelated to my area

☐	70
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24. What was your first full-time job called?
(WRITE THE JOB TITLE ON THE LINE BELOW)

Briefly describe the kind of work you did on your
first full-time job.

OFFICE USE ONLY	
9	9 71-72

25. To what extent was your first full-time job related
to your area of specialization at the Vocational Center?

- 1 in my area (SKIP TO QUESTION 27)
- 2 related to my area (SKIP TO QUESTION 27)
- 3 unrelated to my area (CONTINUE WITH QUESTION 26)

☐	73
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26. Which one of the following reasons best indicates why your first job was not in or related to your area of specialization?

- 1 no jobs in or related to my field were available in the community
- 2 I didn't want the kind of work for which I was trained
- 3 I wasn't interested in the particular jobs in my field which were available
- 4 I got married and needed to take the best job I could find
- 5 I needed to take the best job I could find for some reason other than marriage
- 7 other (SPECIFY:) _____

☐

74

27. Please indicate your hourly wage rate for your first job.
(SELECT THE MOST APPROPRIATE RANGE BELOW. SALARIED WORKERS SHOULD ESTIMATE AN HOURLY RATE.)

- 1 less than \$2.00
- 2 \$2.00 to \$2.49
- 3 \$2.50 to \$2.99
- 4 \$3.00 to \$3.49
- 5 \$3.50 to \$3.99
- 6 \$4.00 to \$4.99
- 7 \$5.00 to \$5.99
- 8 \$6.00 to \$7.99
- 9 \$8.00 or more

☐

75-76

28. Have you obtained any promotion, other than salary increases, since taking your first job after leaving high school?

- 1 yes, through promotion on the job
- 2 yes, through a change of jobs
- 3 no

☐

77

29. If you had it to do over again, would you enroll in the same program of study in your high school years?

- 1 yes (SKIP TO QUESTION 31)
- 2 no (CONTINUE WITH QUESTION 30)

☐

78

30. In which course of study would you enroll?
(WRITE THE PROGRAM OF STUDY ON THE LINE BELOW.)

OFFICE USE ONLY	
SEE CODE 1	
☐	☐
79-80	

31.

OFFICE USE ONLY

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●	●	●

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- 74 -
7

OFFICE USE
ONLY[illegible]

TOPICS	Frequency				
	1 very often	2 often	3 occasionally	4 rarely	5 never
a. work					
b. religion					
c. politics					
d. business or economic conditions					
e. world affairs					
f. national affairs					
g. state affairs					
h. local community problems					
i. hobbies					
j. sports					
k. music, art and/or literature					
l. labor union matters					
m. family matters					

32.

OFFICE USE ONLY		31
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		44
		45

33. Please indicate the extent to which you are involved in the organizations listed below.
(PLEASE CHECK THE APPROPRIATE BOX.)

ORGANIZATION	1 presently an officer	2 active member	3 member	4 not a member
a. church, temple, etc.				
b. political organization				
c. service clubs (for example, Lions, Rotary)				
d. adult athletic group (for example, bowling or softball team)				
e. labor union				
f. fraternal organization (for example Masons, Knights of Columbus, F.O.E.)				
g. veterans organization				
h. business, trade or professional organization				
i. cultural organization				
j. youth leader (for example, coaching Little League, scoutmaster)				

OFFICE USE ONLY
46
47
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THANK YOU VERY MUCH FOR YOUR COOPERATION. PLEASE RETURN
THE QUESTIONNAIRE BY U.S. MAIL USING THE ENCLOSED SELF-
ADDRESSED, PRE-PAID ENVELOPE.

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10

OFFICE USE ONLY

0	2	1	1														
01-04		05-06		07	08-09		10-12		13-14		15-17						

9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
18-36																		

SUNY/BUFFALO SURVEY RESEARCH CENTER

March, 1975

Project #0211

Telephone Follow-up
on non-respondents
to mail survey

Name: _____ Name: _____ (RECORD NAME CHANGE)

Phone: _____

Call	Int. ID#	Date		Time		Disposition											Comments				
		Mo	Day	Start	Finish	Final					Pending										
						C	RF	T	UI	UL	NPN	NA	B	NAH	P	UN					
	1																				
	2																				
	3																				
	4																				
	5																				

- 78 -

Final Disposition Codes

- C - Completion
- RF - Refusal
- T - Termination
- UI - Unable to interview (Comments)
- UL - Unable to locate

RETURN TO
SUPERVISOR

Pending Disposition Codes

- NPN - New Phone Number (Comments)
- NA - No answer
- NAH - Not at home
- P - Partial
- UN - Unavailable now

MAKE APPOINTMENT

RETURN TO SUPERVISOR
ONLY AFTER: 5 CALLS

Survey Research Center
SUNYAB
4230 Ridge Lea Road
Buffalo, N.Y. 14226

Project # 0211

GENERAL INSTRUCTIONS:

DO NOT READ THE LIST OF RESPONSE CHOICES UNLESS INSTRUCTED TO DO SO.

CODE ALL ANSWERS AS INTERVIEW IS ADMINISTERED, EXCEPT INAPPLICABLES
AND EXCEPT WHERE OTHERWISE INDICATED.

A. INTRODUCTION:

1. Hello, my name is _____, and I'm working on a survey concerning high school and vocational school education. The survey is being conducted by the Survey Research Center at UB in conjunction with the Board of Cooperative Educational Services of Erie and Cattaraugus counties. I'd like to know if I may speak with _____.

(IF YOU ARE SPEAKING TO THE SELECTED RESPONDENT, GO TO 5.

IF THE RESPONDENT IS UNAVAILABLE AT THE TIME, GO TO 2.

IF THE RESPONDENT NO LONGER RESIDES AT THIS DWELLING UNIT,
GO TO 3.

IF YOU ARE PUT THROUGH TO THE RESPONDENT, GO TO 4.)

2. Can you tell me when I might be able to find _____
at home?

(ENTER SUGGESTED TIME ON CALL RECORD SHEET.)

3. Can you give me his/her telephone number?

(ENTER CURRENT TELEPHONE NUMBER OF RESPONDENT ON THE CALL
RECORD SHEET AND ATTEMPT TO CONTACT AT THE NEW NUMBER.)

4. Hello, my name is _____, and I'm working on a survey concerning high school and vocational school education. The survey is being conducted by the Survey Research Center at UB in conjunction with the Board of Cooperative Educational Services of Erie and Cattaraugus counties.

(CONTINUE WITH 5.)

5. We are studying the costs and the effectiveness of our vocational and general education programs. Part of the study includes a survey of former graduates to get your reactions to your work (in high school/vocational school). Your help will be very valuable to the success of the study and, since we've been unable to contact you by mail, I'd like to ask you some questions now.

(IF RESPONDENT SAYS THAT HE/SHE HAS NOT RECEIVED THE QUESTIONNAIRE IN THE MAIL AND SAYS THAT HE/SHE PREFERS TO BE SENT A MAIL QUESTIONNAIRE RATHER THAN BE INTERVIEWED ON THE PHONE, ASK FOR HIS/HER FULL AND CURRENT ADDRESS, RECORD ON THE CALL RECORD AND GO TO 6.

IF RESPONDENT CLAIMS TO BE TOO BUSY, GO TO 7.

IF RESPONDENT INSISTS HE/SHE HASN'T THE TIME AT PRESENT, GO TO 8.

IF RESPONDENT DECLINES TO PARTICIPATE, GO TO 9.)

6. Thank you very much for your time. We will put a questionnaire in the mail to you.
7. It will only take about _____ minutes of your time.
8. I'll be happy to call back at a time convenient for you. Can we make an appointment?
9. Thank you anyway for your time.

Survey Research Center
SUNYAB
4230 Ridge Lea Road
Buffalo, New York 14226

OFFICE USE ONLY

Project #

0211

01-04

Grad. date

05-06

Vocational Center

07

Occ. Spec.

08-09

R #

10-12

Card #

13-14

Teacher

15-17

9 9 9 9 9 9 9 9 9 9

9 9 9 9 9 9 9 9 9 9

18-26

- B. 1. Were you trained in (high school/Vocational Center) for an occupation that requires licensing? (IF NEEDED SAY: for example, Cosmetology, Licensed Practical Nurse, etc.)

- 1 yes (CONTINUE WITH QUESTION 2)
2 no (SKIP TO QUESTION 5)
8 don't know, no answer (SKIP TO QUESTION 5)

37

2. Did you take the appropriate examination for your licensed occupation?

- 1 yes (CONTINUE WITH QUESTION 3)
2 no (SKIP TO QUESTION 5)
8 don't know, no answer (SKIP TO QUESTION 5)

38

3. Were you issued a license for your specialization?

- 1 yes
- 2 no
- 8 don't know, no answer

☐ .1

4. How helpful would you say your studies (in high school/ at the Vocational Center) were in preparing you for the licensing examination? Would you say they were: (READ CHOICES 1-3)?

- 1 very helpful
- 2 somewhat helpful
- 3 or not helpful
- 8 don't know, no answer

☐ .2

5. Since attending the (high school/ Vocational Center) have you taken part in any further training or education?

- 1 yes (CONTINUE WITH QUESTION 6)
- 2 no (SKIP TO QUESTION 9)
- 8 don't know, no answer (SKIP TO QUESTION 9)

☐ .3

6. Which one of the following best describes the most recent training or education you have had since leaving (high school/ Vocational Center)? Was it: (READ CHOICES 1-6)?
(REPEAT LIST IF NECESSARY)

- 1 on-the-job training
- 2 apprenticeship
- 3 public occupational school program
- 4 private occupational program
- 5 two or four year college
- 6 or specialized occupational military training
- 7 other (SPECIFY) _____

☐ .4

- 8 don't know, no answer

7. To what extent is your additional training or education related to your area of specialization (in high school/ at the Vocational Center)? Would you say it is (READ CHOICES 1-3)?

- 1 in your area
- 2 related to your area
- 3 or unrelated to your area
- 8 don't know, no answer

☐ .5

8. How helpful were your studies (in high school/at the Vocational Center) in preparing you for this additional training? Were they (READ CHOICES 1-3)?

1 very helpful
2 somewhat helpful
3 or not helpful
8 don't know, no answer

☐

9. How long were you out of high school before you obtained full-time employment?

1 began before leaving high school (ASK 10a ONLY)
2 less than one month (ASK 10a ONLY)
3 one to three months (ASK 10a ONLY)
4 four to six months (ASK 10a ONLY)
5 more than six months (ASK 10a ONLY)
6 have not had a full-time job (ASK 10b ONLY)
8 don't know, no answer (ASK 10a ONLY)

OFFICE USE ONLY	
9	9
8-46	

☐

- 10a. How many applications did you fill out before you found your first full-time job?

- 10b. How many applications have you filled out for a full-time job?

0 none
1 one
2 two-five
3 six-ten
4 more than ten
8 don't know, no answer

☐

11. Who gave you the best advice and assistance when you were looking for your first job? Was it (READ CHOICES 1-5)?

1 a teacher of occupational course(s)
2 a placement counselor at the Vocational Center
3 a high school guidance counselor
4 an employment agency
5 a parent or other relative
6 no one gave me advice (SKIP TO QUESTION 13)
7 other (SPECIFY) _____

☐

8 don't know, no answer

12. How helpful was this advice and assistance to you in actually finding your first job? Was it
(READ CHOICES 1-3)?

1 very helpful
2 somewhat helpful
3 or not helpful
8 don't know, no answer

☐ 50

13. Since leaving high school, what is the total time you have been unemployed? (WRITE THE TOTAL NUMBER OF YEARS AND/OR MONTHS IN THE BOXES.)

9 96 ten years or more
9 98 don't know, no answer

☐ years ☐ months
51 52-53

14. Since leaving high school, what is the total time you have been employed only part-time and looking for work? (WRITE THE TOTAL NUMBER OF YEARS AND/OR MONTHS IN THE BOXES.)

9 96 ten years or more
9 98 don't know, no answer

☐ years ☐ months
54 55-56

15. At the present time, what is your employment situation?
Are you employed full-time, part-time, or what?

(IF R. ANSWERS "part-time", ASK:)

Are you looking for full-time employment?

(IF R. IS UNEMPLOYED, ASK:)

Are you looking for employment, or are you unavailable for employment?

- 1 employed full-time (SKIP TO QUESTION 17)
2 employed part-time, but looking for full-time employment (SKIP TO QUESTION 17)
3 employed part-time, and not looking for full-time employment (SKIP TO QUESTION 17)
4 temporarily laid-off (SKIP TO QUESTION 21)
5 unemployed, but looking for employment (SKIP TO QUESTION 21)
6 unemployed and unavailable for employment (ANSWER QUESTION 16, THEN SKIP TO QUESTION 21)
7 other (SPECIFY) _____
8 don't know, no answer (SKIP TO QUESTION 17)

☐ 57

16. For what reason are you unavailable for employment?

- 1 serving in the military (SKIP TO QUESTION 21)
- 2 participating in further training or education (SKIP TO QUESTION 21)
- 3 illness (SKIP TO QUESTION 21)
- 4 housewife or childcare (SKIP TO QUESTION 21)
- 5 not seeking employment (SKIP TO QUESTION 21)
- 7 other (SPECIFY) _____

☐

56

- 8 don't know, no answer (SKIP TO QUESTION 21)

17. What is your present job title? (WRITE THE JOB TITLE ON THE LINE BELOW)

Briefly describe the kind of work you do. (WRITE THE JOB DESCRIPTION ON THE LINES BELOW.)

OFFICE USE ONLY

9

9

59-60

18. How long have you been employed in your present job?

(WRITE THE NUMBER OF YEARS AND/OR MONTHS IN THE BOXES.)

9 96 ten years or more

9 98 don't know, no answer

☐

61 years

☐

62-63 months

19. To what extent is your present job related to your area of specialization (in high school/at the Vocational Center)? Is it (READ CHOICES 1-3)?

- 1 in your area
- 2 related to your area
- 3 or unrelated to your area
- 8 don't know, no answer

☐

64

20. What is your hourly wage rate for your present job?
(IF RESPONDENT IS A SALARIED WORKER SAY:) Can you
estimate how much you make an hour?

- 01 less than \$2.00
- 02 \$2.00 to \$2.49
- 03 \$2.50 to \$2.99
- 04 \$3.00 to \$3.49
- 05 \$3.50 to \$3.99
- 06 \$4.00 to \$4.99
- 07 \$5.00 to \$5.99
- 08 \$6.00 to \$7.99
- 09 \$8.00 or more
- 98 don't know, no answer

	65-66
--	-------

21. How many full-time jobs (IF EMPLOYED: other than your
present job) have you had since leaving high school?

- 1 one (SKIP TO QUESTION 24)
- 2 two or more (CONTINUE WITH QUESTION 22)
- 3 none (SKIP TO QUESTION 28)
- 8 don't know, no answer

	67
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22. What was your second full-time job called?
(WRITE THE JOB TITLE ON THE LINE BELOW)

Briefly describe the kind of work you did on
your second full-time job. (WRITE JOB
DESCRIPTION ON THE LINES BELOW)

OFFICE USE ONLY	
9	9 68-69

23. To what extent was your second full-time job related
to your area of specialization (in high school/at the
Vocational Center)? Was it (READ CHOICES 1-3)?

- 1 in your area
- 2 related to your area
- 3 or unrelated to your area
- 8 don't know, no answer

	70
--	----

24. What was your first full-time job called?

(WRITE THE JOB TITLE ON THE LINE BELOW)

Briefly describe the kind of work you did on
your first full-time job. (WRITE JOB DESCRIPTION
ON THE LINES BELOW.)

OFFICE USE ONLY

9	9	71-72
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25. To what extent was your first full-time job related
to your area of specialization (in high school/at the
Vocational Center)? Was it (READ CHOICES 1-3)?

- 1 in your area (SKIP TO QUESTION 27)
- 2 related to your area (SKIP TO QUESTION 27)
- 3 unrelated to your area (CONTINUE WITH QUESTION 26)
- 8 don't know, no answer

☐	73
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26. Which one of the following reasons best indicates why
your first job was not in or related to your area of
specialization? Was the reason that (READ CHOICES 1-5)?

- 1 no jobs in or related to your field were
available in the community
- 2 you didn't want the kind of work for which
you were trained
- 3 you weren't interested in the particular
jobs in your field which were available
- 4 you got married and needed to take the best
job you could find
- 5 or you needed to take the best job you could
find for some reason other than marriage
- 7 other (SPECIFY) _____

☐	74
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- 8. don't know, no answer

27. What was your hourly wage rate for your first job?
(IF RESPONDENT SAYS HE/SHE WAS A SALARIED WORKER SAY: Can you estimate how much you made an hour?)

- 01 less than \$2.00
- 02 \$2.00 to \$2.49
- 03 \$2.50 to \$2.99
- 04 \$3.00 to \$3.49
- 05 \$3.50 to \$3.99
- 06 \$4.00 to \$4.99
- 07 \$5.00 to \$5.99
- 08 \$6.00 to \$7.99
- 09 \$8.00 or more
- 98 don't know, no answer

☐ 75-76

28. Have you obtained any promotion, other than salary increase, since taking your first job after leaving high school?

(IF R. ANSWERS YES, ASK:) Was the promotion obtained on the job or through a change in jobs?)

- 1 yes, through a promotion on the job
- 2 yes, through a change of jobs
- 3 no
- 8 don't know, no answer

☐ 77

29. If you had it to do over again, would you enroll in the same program of study in your high school years?

- 1 yes (SKIP TO QUESTION 31)
- 2 no (CONTINUE WITH QUESTION 30)
- 8 don't know, no answer (SKIP TO QUESTION 31)

☐ 78

30. In which course of study would you enroll?
(WRITE THE PROGRAM OF STUDY ON THE LINE BELOW.)

OFFICE USE ONLY
SEE CODE 1

☐ ☐ 79-80

OFFICE USE ONLY

* * * * *

01-12

* * * * *

13 14 15-17

31. I will now read a list of topics which you may sometimes talk about with your friends or family. After I name a topic I would like you to indicate whether you discuss these topics very often, often, occasionally, rarely, or never. The first topic is work; would you say you discuss work with friends or family members very often, often, occasionally, rarely or never ? (CODE RESPONSE 1 to 5 AS PER CHOICES BELOW.) The next topic is: (READ LIST b.-m.; REPEAT RESPONSE CHOICES TO RESPONDENT ONLY AS NEEDED.)

- 1 very often
- 2 often
- 3 occasionally
- 4 rarely
- 5 never
- 8 don't know, no answer

- | | | | |
|------------------------------------|-------|--------------------------|----|
| a. work | _____ | ☐ | 18 |
| b. religion | _____ | ☐ | 19 |
| c. politics | _____ | ☐ | 20 |
| d. business or economic conditions | _____ | ☐ | 21 |
| e. world affairs | _____ | ☐ | 22 |
| f. national affairs | _____ | ☐ | 23 |
| g. state affairs | _____ | ☐ | 24 |
| h. local community problems | _____ | ☐ | 25 |
| i. hobbies | _____ | ☐ | 26 |
| j. sports | _____ | ☐ | 27 |
| k. music | _____ | ☐ | 28 |
| l. labor union matters | _____ | ☐ | 29 |
| m. family matters | _____ | ☐ | 30 |

32. I will now read a list of leisure time activities which you may sometimes engage in. As before, please indicate whether you engage in each activity that I mention very often, often, occasionally, rarely, or never. The first activity is reading newspapers. (REPEAT RESPONSE CHOICES ONLY IF NEEDED.) The next activity is (READ LIST b.- o.; REPEAT RESPONSE CHOICES ONLY AS NEEDED.)

- 1 very often
- 2 often
- 3 occasionally
- 4 rarely
- 5 never
- 8 don't know, no answer

- a. reading newspapers ☐ 31
- b. reading non-fiction books ☐ 32
- c. reading general magazines ☐ 33
- d. reading trade books or periodicals ☐ 34
- e. attending educational courses ☐ 35
- f. attending lectures and/or discussions ☐ 36
- g. attending spectator sports ☐ 37
- h. attending theatrical or musical performances ☐ 38
- i. listening to music at home ☐ 39
- j. watching television ☐ 40
- k. entertaining or visiting friends or relatives ☐ 41
- l. going to the movies ☐ 42
- m. gardening ☐ 43
- n. working with autos ☐ 44
- o. working with crafts or hobbies ☐ 45